

**Monograph of *Aulacoderus la Ferte*, a subgenus of *Anthicus* Paykull
(Coleoptera: Anthicidae)**

by

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ABSTRACT

Sixty-one new species are described and 55 previously described species are redescribed. The aedeagus and other diagnostic features of each species are illustrated. The 116 species are subdivided into 19 Sections. A key to the males of the Sections and keys to the males of the species within each Section are given. A short discussion is given of 22 previously described species of which insufficient or no material was available.

Four previously described species are found to be synonyms: *A. manzeri* Bonadona, 1967, is a synonym of *A. picheyrei* Peyerimhoff, 1943; *A. middletoniensis* van Hille, 1961, is a synonym of *A. tumefactus* Pic, 1901; *A. subrotundipennis* Pic, 1948, is a synonym of *A. rotundipennis* Pic, 1895; *A. sulcatus* Pic, 1897, is a synonym of *A. funebris* (Reitt), 1884.

A. bicoloriarsis Pic, 1948, is probably a synonym of *A. robusticeps* Pic, 1903, however, as no type material of the latter species was available, this question is left open. *A. melitensis* Pic, 1903, has been changed to *A. sulcithorax* Desbr., 1875, subspecies *melitensis* Pic. It occurs on Malta and its anatomical features are identical to those of *A. sulcithorax* Desbr. from Israel but the colour pattern is strikingly different.

INTRODUCTION

THE DEFINITION AND CHARACTERISTICS OF AULACODERUS

The subgenus *Aulacoderus* was established by M. F. de la Ferté-Sénéctère. The subgenotype was *A. (A.) transversalis* Laf., 1848, but this name was changed to *A. (A.) mutatus* Gemm., 1870, because *A. transversalis* Villa, 1832, had been previously described.

The definition of *Aulacoderus* is given as follows:

“*Corselet court, le plus souvent transversal, ayant à la base un sillon transversal qui réunit entre elles les fossettes latérales et le divise presque en deux lobes (S. G. Aulacoderus, nobis). Groupe essentiellement sud-africain.*” (La Ferté, 1848).

La Ferté described seven species of *Aulacoderus*, of which six are from South Africa and one is from Hungary.

Aulacoderus has the following characteristics:

- (1) The “sillon transversal” is a dorsal transverse depression or groove near and parallel to the posterior margin of the prothorax. This groove connects the lateral constrictions (fossettes latérales) which are usually filled with, or covered by, long hairs. However, in some species the transverse groove and the lateral constrictions are almost or completely absent (e.g. *A. (A.) pici* spec. nov. Fig. 363).
- (2) The elytra of the male have an apical notch and a pointed apex median to the notch. The notch encloses the opening of a gland, which lies between the two layers of the elytron (van Hille, 1954). The function of this gland is not known, however, it resembles a structure found in some Malachiidae (Evers, 1936). Evers attributes to the gland the function of secreting a sexual attractant.
- (3) A physiological character of *Aulacoderus*, not found in other species of the genus *Anthicus*, is the attraction of the males to cantharidin, a substance which occurs in beetles of the family Meloidae. Dead meloid beetles also attract males of the Anthicid genera *Notoxus*, *Pseudonotoxus*, *Mecynotarsus* and both sexes of at least some species of *Formicomus*. Many of the species of *Aulacoderus* were collected by using meloid ‘bait’ with the result that only the males of several species have been found.

Although *Aulacoderus* shares the above discussed three characteristics with *Notoxus* a close relationship between *Aulacoderus* and *Notoxus* has never been considered because *Aulacoderus* lacks a prothoracic horn, the most obvious character of *Notoxus* and related genera. Furthermore, the structure and mechanics of the aedeagus of *Aulacoderus* are essentially different from those of *Notoxus*.

NOTE ON TEXT-FIGURES

The text figures have been drawn, with the aid of a microscope and camera lucida, from specimens mounted in canada balsam. No attempt has been made to produce symmetrical drawings. In some cases deviations from symmetry in drawings of symmetrical structures are caused by the tilt of the object in the mount. All scales are in millimetres.

NOTE ON LOCALITIES

In giving localities the Degree Reference System of Edwards and Leistner as described in Leistner & Morris (1976) is used wherever possible and has been added by the author to the data recorded on the labels.

The basic unit (Fig. 1) is a one-degree square of latitude and longitude designated by a degree Reference Number composed of the degrees of latitude and longitude of its north-west corner. Subdivisions of the one-degree square by successive quarterings provide half- and quarter-degree squares that are named A, B, C, and D from left to right above and then below. Quarter-degree citation involves merely 4 digits and 2 letters, e.g. 2217CC (Fig. 1).

Localities outside southern Africa, and therefore not given in Leistner & Morris, are quoted according to the labels of the specimens.

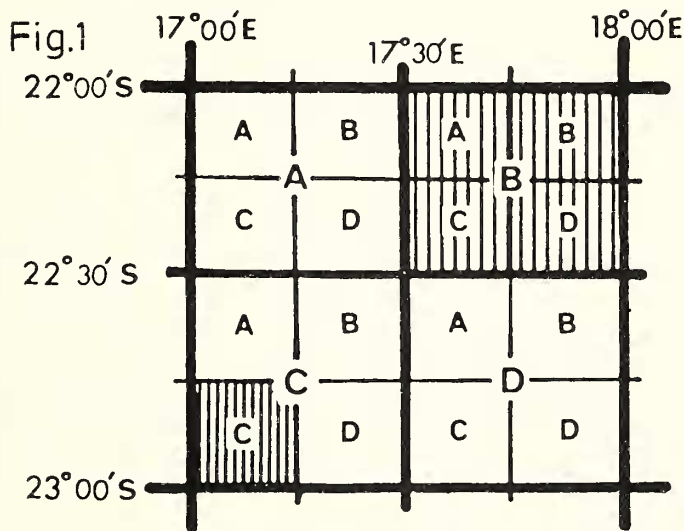
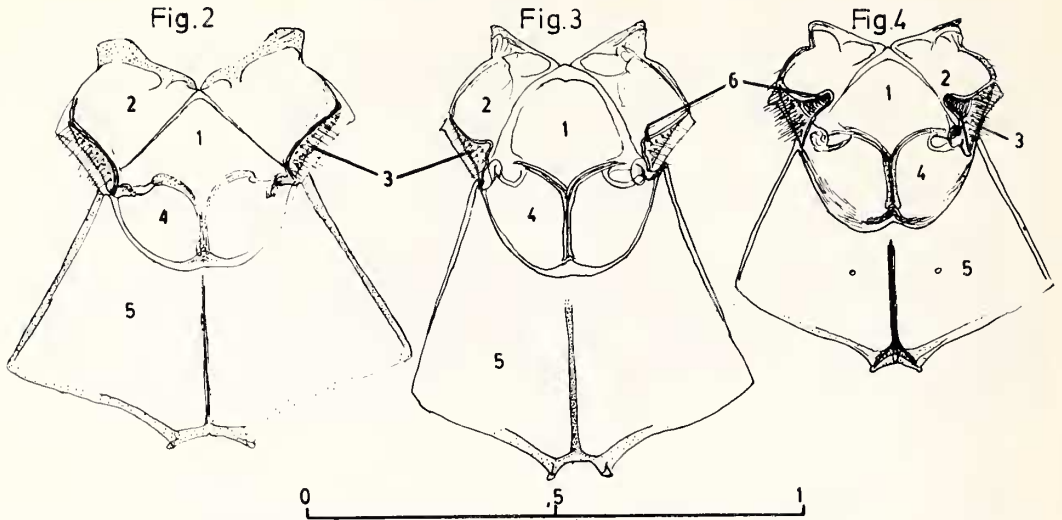


Fig. 1. Example of one-degree square and subdivisions. One-degree square 2217. Half-degree square 2217B. Quarter-degree square 2217CC.

MESEPIMERITE APOPHYSES

In many species of *Aulacoderus* there occurs a structure in the thorax for which the name 'mesepimerite apophysis' has been coined.

The mesepimeron (3 in Figs 2-4) is a narrow sclerite that is immovably fused posteriolaterally onto the mesepisternum (2 in Figs 2-4). The thoracic sclerites are usually sparingly supplied with hairs, however, the mesepimeron has erect hairs over the entire surface. In certain species it has a pair of dorsal inwardly pointing apophyses (6 in Figs 3 and 4). These structures seem to be hollow but to have no apparent opening to the exterior. In most cases their walls



Figs 2-4. Meso- and metathoracic sterna. 2. *A. (A.) martini* Pie without mesepimerite apophyses. 3. *A. (A.) seydeli* Pic with reduced mesepimerite apophyses. 4. *A. (A.) fontium* spec. nov. with well developed mesepimerite apophyses. Key to figures: 1: mesosternum. 2: mesepisternum. 3: mesepimeron. 4: mesocoxal cavities. 6: mesepimerite apophyses.

have a spiral strengthening. These apophyses show little variation from species to species, however, in the species of Section 1 they are enlarged and appear as inflated balloons without spiral marking (Figs 13 and 18) and in Section 12 they are reduced (Fig. 3). A function for these apophyses has not been discovered. Neither are muscles attached to them nor are they a pivot for articulation with other internal skeletal structures.

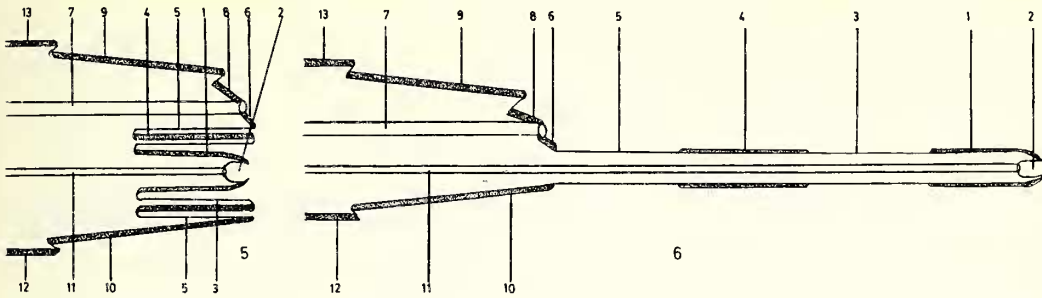
In some species (*A. (A.) longicornis* (Fig. 245), *A. (A.) perlucidus* and *A. (A.) sibayensis*) similar apophyses with spirally strengthened walls occur in the prothorax, pointing inwards from the lateral constrictions. In *A. (A.) apterus* (Fig. 125) an additional pair of apophyses occurs on the metasternum. In the genus *Notoxus* and in some species of *Anthicus* similar apophyses occur on the first abdominal sternum. These may occur side by side with the mesepimerite apophyses. Presence or absence of mesepimerite apophyses has been used in separating the species of *Aulacoderus* into sections.

ABDOMEN AND GENITAL TUBE

The shape and external features of the species of *Aulacoderus* are rather uniform and pigmentation and size are somewhat variable within the species. The aedeagus and surrounding abdominal segments afford the most reliable diagnostic features. The female genital tube is mainly membranous and has few diagnostic features.

For the naming of the parts of the aedeagus the interpretation of Sharp & Muir (1912) has been followed. Figs 5 and 6, based on Figs 239a and b of Sharp & Muir, are diagrams of the posterior part of the abdomen and of the male genital tube of a generalized beetle. The abdomen consists of ten segments. The aedeagus consists of two sclerotized parts, the median lobe (1) and the tegmen (4) which are connected by the first connecting membrane (3). By means of the second connecting membrane (5) the tegmen is attached dorsally to the tenth sternite (6) and ventrally to the ninth sternite (10).

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)



Figs 5-6. Diagram of posterior part of male abdomen with genital tube of generalised coleopteran, modified from Figs 239a and b of Sharp and Muir (1912). Fig. 5: aedeagus inverted. Fig. 6: aedeagus everted. Key to figures: 1: median lobe. 2: internal sac. 3: 1st connecting membrane. 4: tegmen. 5: 2nd connecting membrane. 6: 10th abdominal sternum. 7: rectum. 8: 10th Abdominal tergum. 9: 9th abdominal tergum. 10: 9th abdominal sternum. 11: ejaculatory duct. 12: 8th abdominal sternum. 13: 8th abdominal tergum.

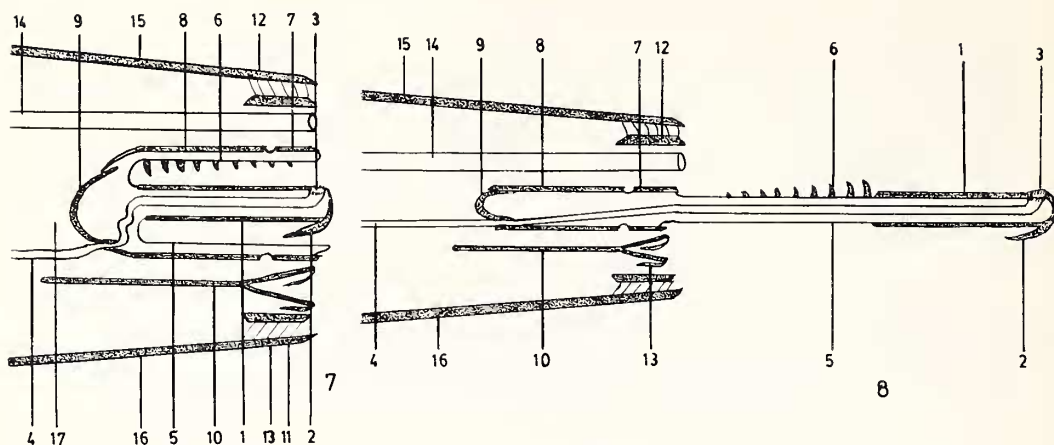
In the resting or inverted position (Fig. 5) the median lobe (1) is surrounded by the first connecting membrane (3) which is surrounded by the tegmen (4) which in turn is surrounded by the second connecting membrane (5). The entire male genital tube lies inside the terminal abdominal segments.

When eversion takes place, the two connecting membranes turn inside out (Fig. 6). The apex of the aedeagus moves backwards over a distance equal to the sum of the lengths of the median lobe (1), the first connecting membrane (3), the tegmen (4), and the second connecting membrane (5).

In the family Anthicidae the abdomen differs from the condition illustrated in Figs 5 and 6. The abdomen consists of five exposed segments and a sixth retracted segment. For the larva of *Anthicus*, Bonadona (1958, Fig. 2a) figures nine abdominal segments and a pygidium. The homologies of the six abdominal segments of the adult anthicid with the nine of the larva and the ten of the generalized beetle are not known. For this reason the abdominal segments of the adult *Aulacoderus* have not been numbered. Only the last two segments are used for diagnostic characters and these are referred to as 'the last exposed segment' and 'the retracted segment'.

In *Aulacoderus* (Figs 7 and 8) the abdominal terga are membranous except for those of the last exposed segment (15) and of the retracted segment (12). The last exposed tergum is lightly sclerotized. In the male it is semicircular or trapezoidal, in the female it is triangular and in some species it has an indented or grooved apex. The last exposed sternum of the male (16) often has useful diagnostic features. The retracted segment lies inside the last exposed segment. In the male the tergum (12) is horseshoe-shaped and the sternum (13) consists of a pair of lightly sclerotized plates except in a few species in which the sternum is a single sclerite. The rectum (14) and the genital tube pass between the tergum and the sternum of the retracted segment. There is no sclerite corresponding to the 10th sternum (6 in Figs 5 and 6) lying between anus and genital tube. In the female tergum and sternum of the retracted segment both consist of paired plates surrounding the rectum and genital tube.

In the male the spiculum gastrale is Y-shaped (10 in Figs 7 and 8). Its distal end, with the Y-arms, lies dorsal to the sternum of the retracted segment (13) and ventral to the aedeagus. In many species the spiculum gastrale has a pair of extraspicular sclerites (11) which articulate with the apex of each Y-arm and are connected to the sternum of the retracted segment by means of fine connective tissue. In the female the spiculum gastrale is a simple bar without apical arms. Sharp & Muir (1912) do not figure the spiculum gastrale in their Figs 239a and b.



Figs 7-8. Diagram of posterior part of male abdomen with genital tube of *Aulacoderus*, Albitarsis Group. Fig. 7: aedeagus inverted, Fig. 8: aedeagus everted. Key to figures: 1: median lobe. 2: ventral spine of 1. 3: genital opening. 4: ejaculatory duct. 5: (1st) connecting membrane. 6: dorsal teeth of 5. 7: apical piece of tegmen. 8: basal piece of tegmen. 9: basal cup of tegmen. 10: spiculum gastrale. 11: extra-spicular sclerites of 10. 12: tergum of retracted abdominal segment. 13: sternum of retracted abdominal segment. 14: rectum. 15: last exposed abdominal tergum. 16: last exposed abdominal sternum. 17: connective tissue.

The aedeagus of *Aulacoderus* consists of a median lobe (1 in Figs 7 and 8), a first connecting membrane (5) and a tegmen (7, 8 and 9). The median lobe is a single sclerite which has the genital opening dorsally, apically or subapically. In the species of Sections 7 and 8 it has a ventral apical or subapical spine (3). The first connecting membrane (5) is attached to the base of the median lobe and to the apical region of the tegmen. In the species of Sections 1-8 it has a dorsal row of teeth (6) which point inwards and backwards when the aedeagus is inverted and outwards and forwards when it is everted. The teeth strengthen the connecting membrane without impeding its movement and anchor the aedeagus in the female during copulation. The tegmen consists of an apical (7) and a basal piece (8) and a basal cap (9). The latter is thimble-shaped and fits loosely into the base of the tegmen and usually falls off when the aedeagus is manipulated during preparation. The ejaculatory duct (4) enters the aedeagus ventrally to the basal cap.

There is no second connecting membrane between the base of the tegmen and the body-wall.

The spiculum gastrale (10) lies directly ventral to the aedeagus. Connective tissue (17) surrounds the base of the aedeagus and the base of the spiculum gastrale. The spiculum gastrale to which the tegmen is anchored is itself anchored in the abdomen by its attachment to the sternum of the retracted segment. The connective tissue allows a slight movement of the tegmen to contribute to the eversion of the aedeagus, however, the main eversion takes place over a distance which equals the sum of the lengths of the median lobe and the first connecting membrane.

PARALLEL SCLERITES

The species of Section 5 have a pair of elongate slender sclerites which lie dorsally to and parallel to the median lobe of the aedeagus and which are called the 'parallel sclerites'.

The parallel sclerites may be longer (Fig. 120) or shorter (Fig. 143) than the median lobe.

They may be fused at the base forming an elongate V-shaped structure (Fig. 158). At the apex they may be forked (Fig. 153) or have hooks or spines (Fig. 166). They are not attached to the median lobe but to the distal region of the connecting membrane. If they are short, they may turn upside down when the connecting membrane turns inside out (Fig. 79), however, it is unlikely that this would occur in the live insect.

ABBREVIATIONS OF NAMES OF DEPOSITORIES OF MATERIAL STUDIED

The following is a list of abbreviations of Museums and other institutions from which the author has had material on loan and where identified material is deposited.

AMSA	Albany Museum, Grahamstown, South Africa.
BMNH	British Museum (Natural History), London, England.
ITZA	Institute for Taxonomic Zoology, Div. Entomology, University of Amsterdam, Nederland.
MNHN	Muséum National d'Histoire Naturelle, Paris, France.
MRAC	Muséum Royal de l'Afrique Centrale, Tervuren, Belgium.
MSNG	Museo Civico di Storia Naturale, Giacomo Doria, Genoa, Italy.
NCI	National Collection of Insects, Plant Protection Research Institute, Pretoria, South Africa.
NHMP	Natural History Museum, Prague, Czechoslovakia.
NMW	Naturhistorisches Museum, Vienna, Austria.
SAM	South African Museum, Cape Town, South Africa.
TMP	Transvaal Museum, Pretoria, South Africa.
UEML	University Entomological Museum, Lund, Sweden.
ZEUH	Zoology Department, Division of Entomology, University of Helsinki, Finland.
ZSBM	Zoologische Sammlung des Bayerischen Staates, München, West Germany.

KEY TO SECTIONS OF *AULACODERUS*

In a previous paper on some Anthicidae collected in South Africa (van Hille, 1961), nine species of *Aulacoderus* were described or redescribed and the aedeagus was used as a diagnostic character for the first time. As the structure of the aedeagus in that material was found to show essential differences, the species were divided into three groups: the Albitarsis Group, the Martini Group and the Flavopictus Group.

In a paper on the Anthicidae of northern Zululand (van Hille, 1971), five more species of *Aulacoderus* were described or redescribed. Four species were placed in the Albitarsis Group and a fifth, *A. pedester* van Hille in the Martini Group because of its short and broad aedeagus.

With the large amount of material available for the present work, it was found that many species did not fit into any of the three groups proposed in 1961. The species are now divided into 18 sections, based upon the abdominal features of the male. An additional section, Section 19, is an assemblage of unrelated species which do not fit into any of the other 18 sections.

The Albitarsis Group is now represented by Sections 1-8. The division into sections is based on secondary characters. About half of the known species of *Aulacoderus* belong to these eight sections.

The Martini Group is represented by Section 15, however, it was found that *A. pedester* is not closely related to the species in this section. Together with some similar species it is now placed in Section 10.

The Flavopictus Group is represented by Section 16.

All keys use male structures as diagnostic characters and thus cannot be used for identification of females.

- | | | |
|----|--|------------|
| 1 | With mesepimerite apophyses | 2 |
| — | Without mesepimerite apophyses | 15 |
| 2 | Mesepimerite apophyses roundly inflated at apex (Fig. 13) | Section 1 |
| — | Mesepimerite apophyses not inflated | 3 |
| 3 | Connecting membrane of aedeagus with dorsal teeth | 4 |
| — | Connecting membrane of aedeagus without dorsal teeth | 10 |
| 4 | Distal tooth of connecting membrane of aedeagus articulating with lower part of median lobe (Fig. 31) | Section 2 |
| — | Distal tooth of connecting membrane of aedeagus not articulating with median lobe | 5 |
| 5 | Spiculum gastrale of male with simple Y-arms | 6 |
| — | Spiculum gastrale of male with forked Y-arms (Fig. 42) | Section 3 |
| 6 | Spiculum gastrale of male with sclerite between Y-arms (Fig. 58) | Section 4 |
| — | Spiculum gastrale of male without sclerite between Y-arms | 7 |
| 7 | Aedeagus with parallel sclerites (Fig. 120) | Section 5 |
| — | Aedeagus without parallel sclerites | 8 |
| 8 | Median lobe of aedeagus with ventral apical or subapical spine | 9 |
| — | Median lobe of aedeagus without ventral apical or subapical spine | Section 6 |
| 9 | Median lobe of aedeagus with simple narrow ventral spine (Fig. 232) | Section 7 |
| — | Median lobe of aedeagus with broad or complex ventral spine (Figs 271 and 289) | Section 8 |
| 10 | Median lobe of aedeagus with ventral proximally recurved hook (Fig. 353); last exposed abdominal sternum of male with apical excavation with median distally pointing grooved process (Fig. 355) | Section 14 |
| — | Median lobe of aedeagus without ventral hook | 11 |
| 11 | Sternum of retracted abdominal segment of male with two pairs of hooks (Figs 301 and 305); aedeagus small | Section 9 |
| — | Sternum of retracted abdominal segment of male without two pairs of hooks | 12 |
| 12 | Aedeagus short and broad | 13 |
| — | Aedeagus elongate | 14 |
| 13 | Wings reduced or absent | Section 10 |
| — | Wings fully developed | Section 11 |
| 14 | Last exposed abdominal sternum of male consisting of a pair of sclerites (Fig. 327) | Section 12 |
| — | Last exposed abdominal sternum of male consisting of single sclerite | Section 13 |
| 15 | Sternum of retracted segment of male consisting of pair of slender backward pointing spikes (Figs. 392) | Section 15 |
| — | Sternum of retracted abdominal segment of male not consisting of pair of slender spikes | 16 |
| 16 | Median lobe of aedeagus with slender pointed sclerotized bar | 17 |
| — | Median lobe of aedeagus without slender sclerotized bar | 18 |
| 17 | Tegmen of aedeagus elongate; median lobe short and membranous with narrow genital opening; apex of sclerotized bar lying immediately proximal to genital opening | Section 16 |
| — | Slender sclerotized bar has narrow oval genital opening at its apex and thus represents the median lobe (Fig. 431) | Section 17 |
| 18 | Tergum of retracted abdominal segment of male with a pair of short thick spines (Fig. 441); median lobe of aedeagus membranous except for a sclerotized base; con- | |

- necting membrane of aedeagus with small pustules (Fig. 440) Section 18
- Tergum of retracted abdominal segment of male and median lobe of aedeagus otherwise Section 19

DEFINITION OF SECTIONS, KEYS TO AND DESCRIPTIONS OF SPECIES
BY SECTION

SECTION 1

The three species in this section are testaceous with a dark transverse band in the middle of the elytra. The prothorax is angular in outline and the angles may be accentuated by lateral points or spines. The mesepimerite apophyses look as if they are inflated and they have no spiral markings. The tergum of the retracted abdominal segment of the male has a proximally pointing flap with a marginal row of fenestrae. The aedeagus is large, about 1 mm long, and complicated in structure. All the species are from the Transvaal, South Africa.

Key to the species of Section 1

- 1 Sternum of retracted abdominal segment of male consists of a pair of hooks pointing inwards (Fig. 12) *thabinensis*
- Sternum of retracted abdominal segment of male consists of a pair of flat plates 2
- 2 Connecting membrane of aedeagus unarmed; basal piece of tegmen shorter than apical piece *erratus*
- First connecting membrane of aedeagus with dorsal field of teeth (Fig. 20); basal piece of tegmen of aedeagus longer than apical piece *spinithorax*

Anthicus (Aulacoderus) thabinensis spec. nov., Figs 9–13

Size. Length 2,41 mm (2,25–2,65); width over broadest part of elytra 0,98 mm (0,87–1,05).

Head (Fig. 9). Glossy, dark testaceous; posterior arch round. Closely punctate, with procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 9). Glossy, testaceous, lighter than head; slightly broader than long, broader than head; with three pairs of lateral angles, each with a long erect hair. Punctures almost as close as on head, but fewer and finer on basal region. With light recumbent hairs. Lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, with long silvery hairs.

Elytra. Glossy, testaceous, with dark transverse band in the middle not quite reaching median suture. Elongate, broadest in front of middle. Punctures less close than on prothorax, with recumbent silvery hairs longer and closer than on prothorax and a number of erect and semi-erect hairs. In male, with small apical point and oblique notch.

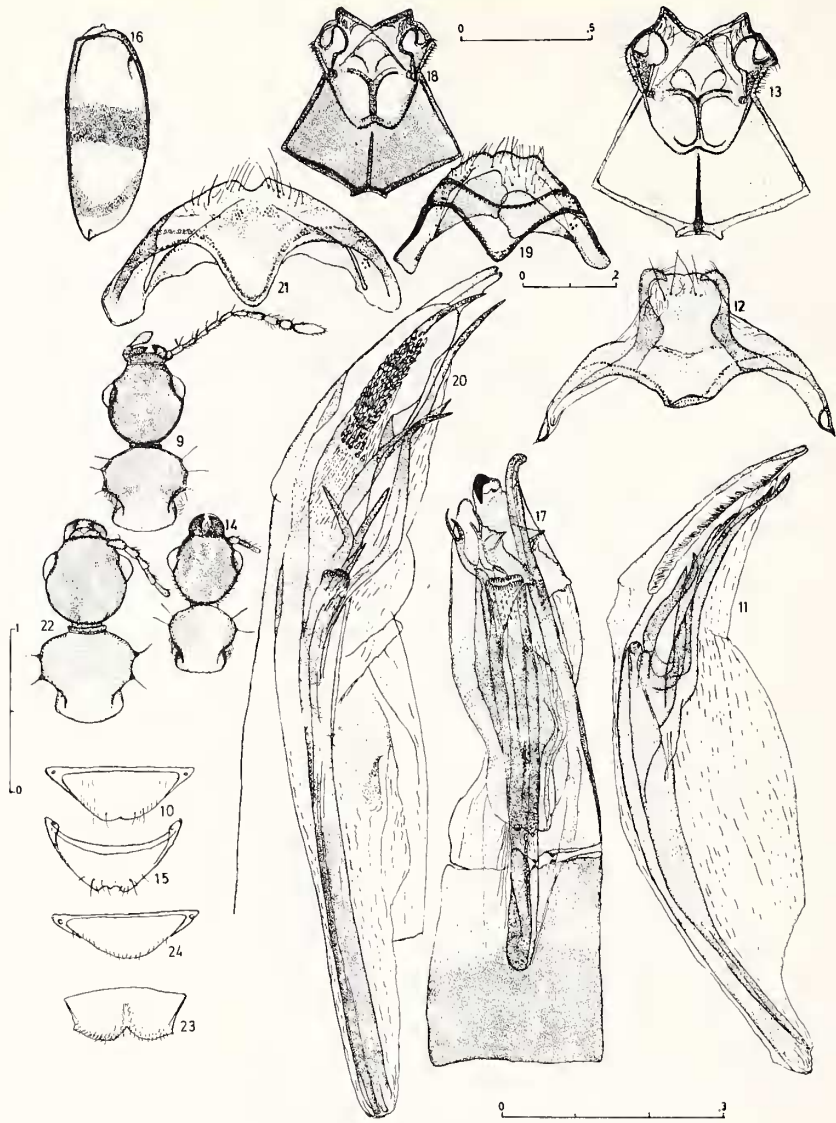
Wings. Fully developed.

Antennae (Fig. 9). Testaceous, slender, apical three or four segments darker and slightly thicker. Last segment a little longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous. With large oval mesepimerite apophyses without spiral markings (Fig. 13).

Male abdomen. Aedeagus (Fig. 11): median lobe slender with three pairs of pointed spines attached at different levels and all pointing distally; connecting membrane with large number of teeth arranged in a dorsal series of about 28 short transverse rows of 3–5 teeth each; tegmen very slightly sclerotized, apical piece ending in two short blunt lobes; basal piece longer than apical piece. Retracted segment (Fig. 12): tergum with flat apex, very slightly indented and with a median proximally pointing flap with marginal row of fenestrae; sternum consisting



Figs 9-24. Section 1. *A. (A.) thabinensis* spec. nov. 9: head and prothorax. 10: last exposed abdominal sternum of male. 11: aedeagus. 12: retracted abdominal segment of male. 13: thoracic sterna showing enlarged mesepimerite apophyses. *A. (A.) erratus* spec. nov. 14: head and prothorax. 15: last exposed abdominal sternum of male. 16: elytron of male. 17: aedeagus. 18: thoracic sterna showing enlarged mesepimerite apophyses. 19: retracted abdominal segment of male. *A. (A.) spinithorax* spec. nov. 20: aedeagus. 21: retracted abdominal segment of male. 22: head and prothorax. 23: last exposed abdominal tergum of male. 24: last exposed abdominal sternum of male.

of a pair of hooks pointing inwards. Last exposed sternum (Fig. 10) apically flat with very slight indentation.

MATERIAL EXAMINED. South Africa: Thabina, Zpb. Dist. [2330CD], xi.1905, Holotype ♂, Paratypes 1 ♂, 2 ♀♀, (C. Zwierstra) (AMSA).

Anthicus (Aulacoderus) erratus spec. nov., Figs 14–19.

Size. Length 2,35 mm; width over broadest part of elytra 0,82 mm.

Head (Fig. 14). Glossy, dark testaceous; posterior arch longitudinally oval. Distinctly punctate with procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 14). Glossy, dark testaceous but not as dark as head. Longer than broad, narrower than head. Shoulders angular; with two long erect lateral hairs on each side. With prominent lateral constrictions connected by a shallow depression over the dorsal surface.

Elytra (Fig. 16). Glossy, testaceous, with a broad dark transverse band across the anterior middle region and a narrower dark subapical band. Punctures prominent with recumbent hairs and a number of erect hairs, especially along the lateral margins.

Wings. Fully developed.

Antennae. Testaceous; apical 3–4 segments gradually broader but not darker; last segment as long as two preceding ones together.

Legs. Testaceous.

Undersurface. Dark testaceous, abdomen darker than thorax. Mesepimerite apophyses (Fig. 18) large and round, without spiral markings.

Male abdomen. Aedeagus (Fig. 17): median lobe slender with dark mark at apex; genital opening round at apical fifth, with beaded margin and a pair of ventral forked horns; connecting membrane attached to proximal quarter of median lobe, with a lateral membranous lobe on either side of the median lobe, with blunt apex and serrated dorsal margin; tegmen with apical piece twice as long as basal piece. Retracted segment (Fig. 19): tergum with trilobed hairy apex and bluntly pointed proximal region with two transverse rows of fenestrae; sternum consisting of a pair of broad triangular plates. Last exposed sternum (Fig. 15) with apical indentation with small median point.

MATERIAL EXAMINED. South Africa: Louis Trichardt [2329BB], grass netting, 14.iii.1973, Holotype ♂, Paratype ♀, (S. Endrödy-Younga) (TMP); no locality, no date, Paratypes 1 ♂, 1 ♀, (A. L. Capener) (AMSA). These specimens were received together with other material collected in the Transvaal between 1940 and 1953.

Anthicus (Aulacoderus) spinithorax spec. nov., Figs 20–24

Size. Length 3,01 mm (2,82–3,20); width over broadest part of elytra 0,95 mm (0,90–1,00).

Head (Fig. 22). Glossy, testaceous; posterior arch round; punctures prominent with short procumbent hairs. Eyes bulging.

Prothorax (Fig. 22). Glossy, testaceous; slightly broader than long, broader than head; with two pairs of lateral points or spines, each with an erect hair. Punctures bigger than on head but finer on posterior area; with short recumbent hairs. Lateral constrictions prominent at $\frac{3}{4}$ of the length of the prothorax, connected by a transverse dorsal groove.

Elytra. Glossy, testaceous with dark transverse band in the middle, not reaching the median suture. Elongate. Punctures more widely spaced than on prothorax, with long coarse recumbent hairs.

Wings. Fully developed.

Antennae. Testaceous; apical four segments slightly broader than but not darker than other segments.

Legs. Testaceous.

Undersurface. Testaceous, mesepimerite apophyses enlarged as in the two preceding species.

Male abdomen. Aedeagus (Fig. 20): median lobe with elongate proximal stalk; genital opening on distal half, round with beaded margin; with four pairs of spines, distal to genital opening, increasing in length from proximal to distal, all pointing distally; connecting membrane with a field of about 15 transverse rows of 6 teeth each in Holotype, but in Paratype there are 3 parallel longitudinal rows of 10–12 teeth each; tegmen with a pair of blunt apical lobes, basal piece longer than apical piece. Retracted segment (Fig. 21); tergum with round apical indentation and some long hairs and with a proximal median flap with submarginal row of fenestrae, becoming a double row laterally; sternum consists of a pair of plates meeting at the median line. Spiculum gastrale with widely diverging Y-arms, somewhat recurved at apex. Last exposed tergum (Fig. 23) with median apical indentation. Last exposed sternum (Fig. 24) with blunt apex.

MATERIAL EXAMINED. South Africa: Barberton [2531CC], to Nelspruit [2530BD], 14–15.x.1930, Holotype ♂, (D. L. Uyttenboogaart) (ITZA); Z. A. 70, Barbeton (*sic*) District, Barbeton (*sic*), humus, x.1961, Paratype ♂, (N. Leleup) (TMP).

SECTION 2

In the two species of this section the dorsal row of teeth of the connecting membrane of the aedeagus articulates with the basal part of the median lobe by means of an elongate sclerite which is probably a modification of one or more of the dorsal teeth.

Both species were collected on the South African south coast.

Key to the species of Section 2

- 1 Connecting membrane of aedeagus with dorsal row of about 23 teeth (Fig. 25)... *flavitarsis*
— Connecting membrane of aedeagus with dorsal row of about 14 teeth (Fig. 31) *perna*

Anthicus (Aulacoderus) flavitarsis Fähr., Figs 25–28

Anthicus flavitarsis Fähræus, 1870: 335

Size. Length 1,80 mm (1,77–1,82); width over broadest part of elytra 0,66 mm (0,65–0,67).

Head (Fig. 26). Glossy, black; posterior arch broadly transverse; punctures moderately prominent with fine grey hairs pointing transversely to the median line. Eyes small and little bulging.

Prothorax (Fig. 26). Somewhat glossy, dark testaceous to black, lighter at base; broader than long, as broad as head; shoulders round; lateral constrictions not very prominent, with short hairs and connected by a transverse basal dorsal groove. Punctures closer than on head, with recumbent hairs slightly coarser than on head.

Elytra. Mat, dark testaceous with small lighter pair of maculae at posterior quarter, only visible when viewed in transmitted light. Shoulders round. Punctures less close than on prothorax, with recumbent hairs, longer than on prothorax.

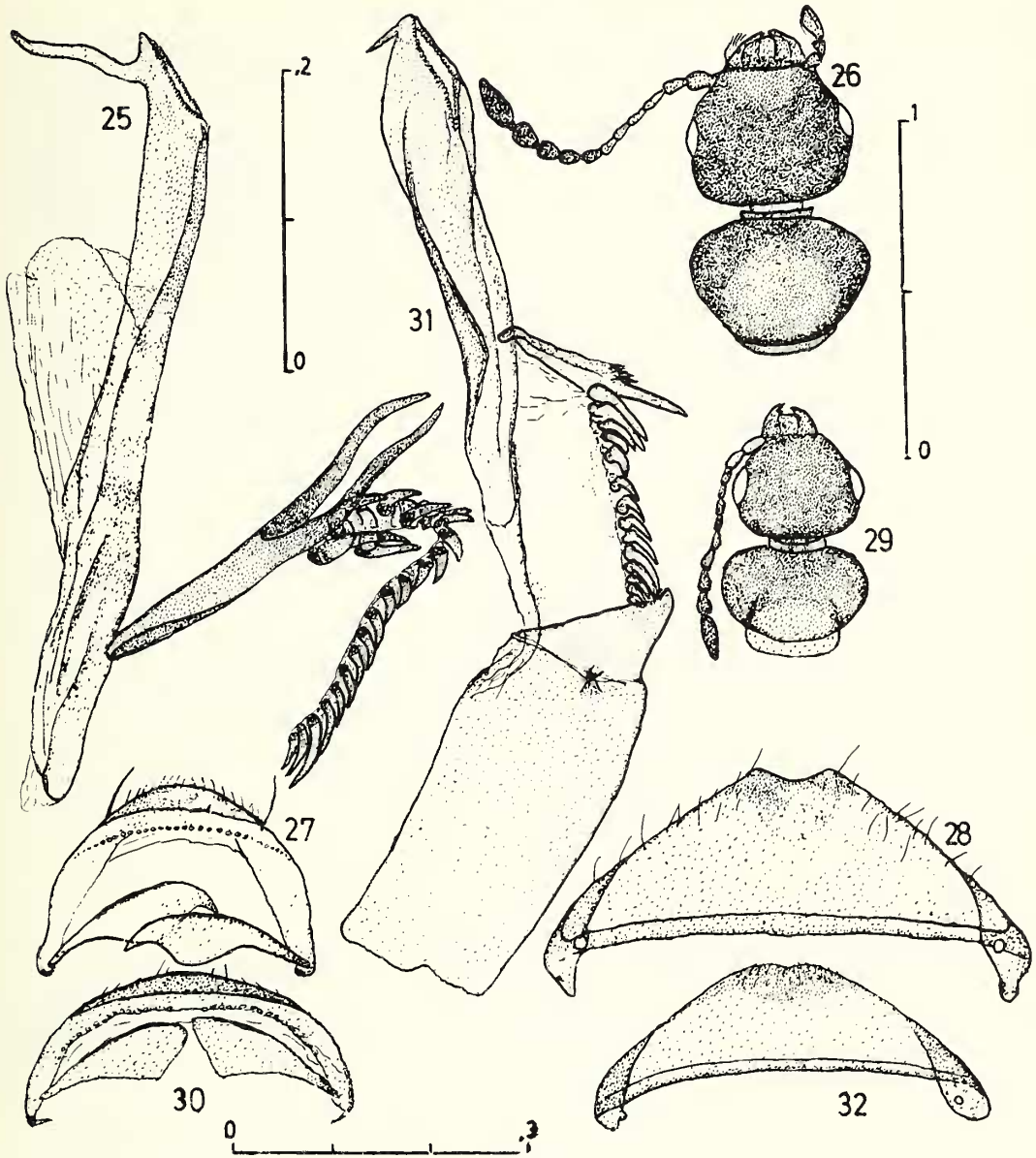
Wings. Fully developed.

Antennae. Dark testaceous, segments two to five or six lighter (Fig. 26).

Legs. Testaceous; coxae, femora and two apical tarsal segments darker.

Undersurface. Dark testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus: median lobe (Fig. 25) with apical backwards pointing ventral spine and apical genital opening with beaded margin; connecting membrane with dorsal row of about 23 teeth of which the distal one is very much larger than the others and is forked at



Figs 25-32. Section 2. *A. (A.) flavitarsis* Fähr. 25: median lobe of aedeagus with part of connecting membrane with row of teeth. 26: head and prothorax. 27: retracted abdominal segment of male. 28: last exposed abdominal sternum of male. *A. (A.) perna* spec. nov. 29: head and prothorax. 30: retracted abdominal segment of male. 31: aedeagus, everted. 32: last exposed abdominal sternum of male.

apex; this tooth articulates with the dorsal side of the median lobe at its basal quarter; tegmen with short apical piece and long basal piece. Retracted segment (Fig. 27): tergum with round apex and dark transverse line between apex and row of fenestrae; sternum consisting of a pair of apically pointed sclerites. Last exposed sternum (Fig. 28) with shallow apical indentation.

MATERIAL EXAMINED. South Africa: Cape of Good Hope, Table Mountain [3318CD], 1906, 2♂♂, (W. Bevins) (named) (BMNH); Newlands, Cape, 99 Kildare Road [3318CD], 19.xi.1979, 20♂♂, (J. C. van Hille) (AMSA); Newlands, Cape, Rhodes Drive [3318CD], 19.xi.1979, 20♂♂, (J. C. van Hille) (AMSA); Cape Town, Table Mountain [3318CD], 21.xi.1979, 20♂♂ (J. C. van Hille) (AMSA); Kirstenbosch [3318CD], 22.xi.1979, 1♂, (J. C. van Hille) (AMSA); Cape Point Nature Reserve [3418AD], 23.xi.1979, 20♂♂, (J. C. van Hille) (AMSA). All specimens collected by author were attracted to meloid bait.

The identification of this species is doubtful. It is not known who identified the specimens in the British Museum. All the specimens examined are from the Cape Peninsula whereas the Type locality is Caffraria, which is the area in the eastern Cape Province, east of the Great Fish River. However, the name Caffraria has been used loosely. The name *flavitorsis* is inappropriate as in most specimens the last two tarsal segments are somewhat dark.

Also in the British Museum is a female specimen, labelled *A. flavitorsis*, from Mossel Bay 3422AA, 1924, R. E. Turner. It looks different from the Table Mountain specimens and it is suspected that it is a different species.

Anthicus (Aulacoderus) perna spec. nov., Figs 29–32

Size. Length 1,70 mm; width over broadest part of elytra 0,70 mm.

Head (Fig. 29). Glossy, dark testaceous to black; posterior arch straight and transverse with rounded angles to eyes; punctures close, with fine procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 29). Glossy, dark testaceous but lighter at base; broader than long, broader than head; strongly narrowing to base; shoulders round; lateral constrictions not prominent, with short hairs and connected by a transverse dorsal groove. Punctures close, with recumbent hairs.

Elytra. Glossy, testaceous, lighter than prothorax; rather broad with round shoulders. Punctures prominent with fine recumbent hairs.

Wings. Fully developed.

Antennae (Fig. 29). Testaceous, slender, apical segments gradually thicker and darker; last segment as long as two preceding ones together.

Legs. Testaceous; coxae, femora and two distal tarsal segments darker.

Undersurface. Dark, testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 31): median lobe with short apical ventral spine and apical genital opening with beaded margin; connecting membrane with dorsal row of about 14 teeth, of which the distal one is much enlarged and articulates with the proximal third of the median lobe; tegmen with basal piece three and a half times as long as apical piece. Retracted segment (Fig. 30): tergum semi-circular with transverse dark line and parallel row of fenestrae, shortly interrupted in the middle; sternum consisting of a pair of elongate triangular plates. Last exposed sternum (Fig. 32) with small shallow apical indentation.

MATERIAL EXAMINED. South Africa: Mossel Bay [3422AA], xii.1934, ♂ Holotype, (R. E. Turner) (BMNH).

SECTION 3

The four species of this section are characterized by forked arms of the spiculum gastrale. Three species are from the western Cape Province, one species from the eastern Transvaal.

Key to the species of Section 3

- 1 Spiculum gastrale asymmetrical (Fig. 34) *asymmetricus*
- Spiculum gastrale symmetrical 2
- 2 Median lobe of aedeagus with subapical, backward pointing ventral spine with small teeth (Fig. 36) *smithi*
- Median lobe of aedeagus without ventral spine 3
- 3 Median lobe of aedeagus with blunt dorsal hump immediately proximal to genital opening (Fig. 32) *atrontitidus*
- Median lobe of aedeagus with sharp dorsal tooth immediately proximal to genital opening (Fig. 45) *spiculosus*

Anthicus (Aulacoderus) asymmetricus spec. nov., Figs 33–35

Size. Length 1,97 mm (1,60–2,30); width over broadest part of elytra 0,75 mm (0,68–0,87).

Head. Glossy, dark testaceous to black; posterior arch broadly round. Punctures distinct with prominent procumbent hairs; a pair of long lateral erect hairs half-way between eyes and neck. Eyes somewhat bulging.

Prothorax. Dark testaceous, the base lighter; broader than long, broader than head. Punctures distinct but finer and fewer on posterior quarter, with recumbent hairs. Lateral constrictions at $\frac{3}{4}$ of length of prothorax, with fine long hairs.

Elytra. Somewhat glossy, dark testaceous to black; with distinct dark punctures and some light punctures with longer semi-erect hairs.

Wings. Fully developed.

Antennae. Slender, testaceous, the apical three segments darker; last segment shorter than two preceding ones together.

Legs. Testaceous, coxae and femora darker.

Undersurface. Dark testaceous, abdomen almost black, thoracic sternites lighter.

Male abdomen. Aedeagus (Fig. 33): median lobe slender, almost straight; with fine apical point and subapical genital opening with finely beaded margin; proximal to genital opening the median lobe broadens and has a dorsal proximal pointing hook; connecting membrane with dorsal row of about 19 teeth; distal to these teeth is a region with about 16 short dark transverse ridges; tegmen with basal piece about five times as long as apical piece. Spiculum gastrale (Fig. 34): each of the Y-arms has a median branch, however, the right one is broader and longer than the left one and has on its median side two small teeth of which the proximal one has two points. Retracted segment (Fig. 35): tergum with broadly round apex with eight to ten stiff hairs; it has a transverse row of fenestrae and ends laterally in a pair of broad lobes; sternum consists of a pair of broad, lightly sclerotized plates. Last exposed sternum with small and shallow apical indentation.

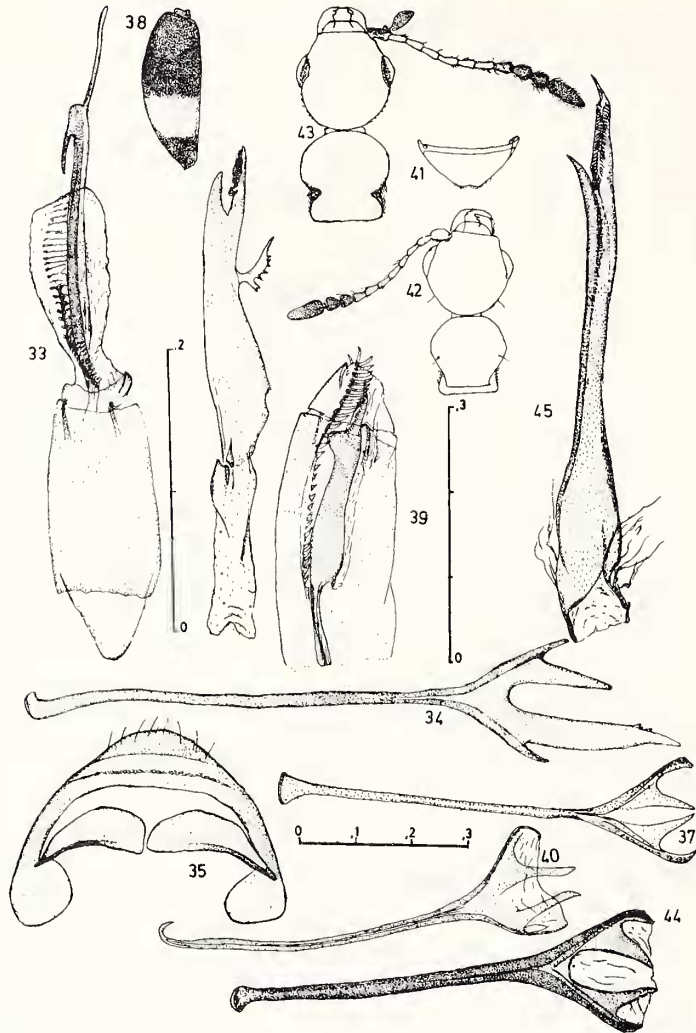
MATERIAL EXAMINED. South Africa: Sudwala Caves near White River [2531AC], along path from ticket office to entrance of cave, to meloid bait, 29.xi.1979, Holotype ♂, Paratypes 4 ♂♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) smithi spec. nov., Figs 36–38.

Size. Length 2,12 mm (2,05–2,14); width over broadest part of elytra 0,86 mm (0,82–0,93).

Head. Glossy, black; posterior arch round; with fine punctures with rather long coarse black hairs and several lateral erect hairs between eyes and neck. Eyes bulging.

Prothorax. Glossy, black; longer than broad, narrower than head. Shoulders sloping and round. Punctures fine with coarse black recumbent hairs. Posterior area testaceous with few



Figs 33-45. *A. (A.) asymmetricus* spec. nov. 33: aedeagus, everted. 34: spiculum gastrale of male. 35: retracted abdominal segment of male. *A. (A.) smithi* spec. nov. 36: median lobe of aedeagus. 37: spiculum gastrale of male. 38: clytron of male. *A. (A.) atronitidus* Laf. 39: aedeagus, inverted. 40: spiculum gastrale of male. 41: last exposed abdominal sternum of male. 42: head and prothorax. *A. (A.) spiculosus* spec. nov. 43: head and prothorax. 44: spiculum gastrale of male. 45: median lobe of aedeagus.

punctures and few hairs. Lateral constrictions at $\frac{3}{4}$ of length of prothorax, with fine light grey hairs.

Elytra (Fig. 38). Glossy, black with a pair of light maculae behind the middle and with indistinct indication of a lighter area on the shoulders. Punctures fine with dark hairs as long as those on prothorax but with light hairs on shoulders and maculae; with a number of light erect hairs.

Wings. Fully developed

Antennae. Testaceous, apical three segments dark testaceous to black and broader; last segment shorter than two preceding ones together.

Maxillary palps. Dark testaceous to black.

Legs. Testaceous, distal half of femora slightly darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 36) with short broad dorsal spine, attached proximally to genital opening, pointing distally, and a subapical ventral spine with about eight ventral teeth; connecting membrane with about 32 single dorsal teeth; tegmen with basal piece almost four times as long as apical piece. Retracted segment: tergum with transverse row of fenestrae; sternum consisting of a pair of thin narrow plates. Spiculum gastrale (Fig. 37) Y-shaped, each arm of Y with median triangular spine which is hardly sclerotized at the base. Last exposed sternum apically flat and somewhat indented.

MATERIAL EXAMINED. South Africa: Piketberg Mountain [3218DA], 27.vii.1977, Holotype ♂, Paratypes 1 ♂, 1 ♀, (M. W. Mansell) (AMSA); Clanwilliam, Cedarberg [3218BB], vii.1957, Paratype 1 ♂, (J. Smith) (MRAC); Clanwilliam, Cedarberg [3218BB], in humus, (N. Leleup) (MRAC).

Anthicus (Aulacoderus) atronitidus Laf., Figs 39–42

Anthicus (Aulacoderus) atronitidus La Ferté-Sénéctère, 1848: 270

Size. Length 2,03 mm (1,95–2,19); width over broadest part of elytra 0,71 mm (0,64–0,75).

Head (Fig. 42). Glossy, dark testaceous to black; posterior arch round; punctures distinct, not very close, with sparse procumbent hairs; a pair of erect lateral hairs halfway between eyes and neck. Eyes slightly bulging.

Prothorax (Fig. 42). Glossy, dark testaceous to black, lighter at base; longer than broad, narrower than head. Shoulders sloping and round; lateral constrictions at $\frac{3}{4}$ of length of prothorax, not very distinct and only slightly hairy. Punctures distinct but sparse with fine recumbent hairs and a pair of erect dorso-lateral hairs half-way along the length of prothorax.

Elytra. Glossy, dark testaceous to black; elongate with round shoulders; punctures well spaced with recumbent hairs, longer than those on prothorax, and about 24 remarkably long erect hairs on each elytron, evenly spaced over the whole surface.

Wings. Fully developed in males, reduced in females.

Antennae. (Fig. 42). Dark testaceous, apical 3–4 segments broader. Last segment longer than two preceding ones together.

Legs. Dark testaceous; tibiae and tarsi slightly lighter.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 39): median lobe with apical point; genital opening elongate with finely grooved margin; with a blunt dorsal lobe proximal to genital opening; connecting membrane with about 34 single dorsal teeth; tegmen with basal piece four times as long as apical piece. Retracted segment: tergum apically round with dark transverse line and parallel row of fenestrae; sternum consisting of a pair of slightly sclerotized plates, overlapping in the middle. Spiculum gastrale (Fig. 40) Y-shaped, each arm of Y with elongate median process. Last exposed sternum (Fig. 41) slightly indented at apex.

MATERIAL EXAMINED. South Africa: Cape of Good Hope, no date, 2 ♂♂, (C. Darwin) (BMNH). No locality, no date, 1 ♂, 1 ♀ (no collector) (NMW). No locality, no date, 2 specimens on one card, (no collector) (MNHN) with two labels: 'A. *flavitarsis* Fahr.?' and '*atronitidus* Laf.', both labels in Pic's handwriting.

The two specimens collected by Darwin, from the unidentified material in the British Museum, are an interesting curiosity. They must have been collected between May 31 and June 18, 1836, which was the period spent by Darwin at the Cape on the home journey of the *Beagle*. Professor V. S. Forbes informed the author that during this time Darwin made an expedition of several days from Cape Town to Paarl Rock and via French Hoek and Sir Lowry's Pass back to Cape Town. One of the specimens has an acquisition label of the British Museum with the date 1885, two years after Darwin's death.

In addition to the above specimens the author has seen 2 ♂♂ (South Africa, Citrusdal [3219CA], on leaves of orange trees, 19.iv.1953, (V. B. Whitehead) (AMSA)) which have a large testaceous macula on the posterior half of each elytron; it reaches the lateral margin but not the median suture. The genitalia and other features are as in *A. atronitidus*. Similar colour variations, especially in males, occur in *A. bicoloritarsis* Pic and in *A. recognitus* Pic.

Anthicus (Aulacoderus) spiculosus spec. nov., Figs. 43–45

Size. Length 2,35 mm (2,20–2,48); width over broadest part of elytra 0,97 mm (0,92–1,02).

Head (Fig. 43). Glossy, black; posterior arch round; with fine punctures and dark procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 43). Glossy, black but posterior area testaceous; as long as broad, narrower than head. Shoulders round. With well developed lateral constrictions at $\frac{3}{4}$ of the length of the prothorax. Punctures fine with recumbent hairs and a few erect hairs.

Elytra. Dark testaceous to black; elongate, with fine punctures and recumbent hairs, longer than on prothorax; with a number of longer erect hairs.

Wings. Fully developed in male, reduced in female.

Antennae (Fig. 43). Testaceous, first and apical four or five segments darker.

Legs. Testaceous; coxae and femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 45) slender, slightly curved; with elongate genital opening with beaded margin; with short apical point and immediately proximal to the genital opening a slightly larger dorsal point; connecting membrane with dorsal row of about 36 single teeth; tegmen with basal piece longer than apical piece. Retracted segment: tergum with subapical transverse dark line and a more proximal parallel row of fenestrae; sternum consisting of a pair of curved plates, narrow at the attachment to the tergum, broader and round at apex. Spiculum gastrale (Fig. 44) Y-shaped, each arm of the Y with a median triangular hook. Last exposed sternum with flat apex, very slightly indented.

MATERIAL EXAMINED. South Africa: Matjesfontein [3320BA], 6.x.1928, Holotype ♂, Paratypes 1 ♂, 1 ♀, (R. E. Turner) (BMNH).

SECTION 4

The seven species of this section have an interspicular sclerite, which lies in the membrane which connects the arms of the Y-shaped spiculum gastrale.

The prothorax has angular shoulders. The median lobe of the aedeagus is slender and the connecting membrane has between 12–25 dorsal teeth. The species occur in South Africa: Eastern Cape Province, Natal and Transvaal.

Key to the species of Section 4

- 1 Median lobe of aedeagus with dorsal distally pointing arm, almost half the length of median lobe (Fig. 46) *mogotoensis*
— Median lobe of aedeagus without dorsal arm 2

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

- 2 Sternum of retracted abdominal segment of male consists of a pair of roundish sclerites which have a fringe of 8–12 soft spines on dorsal side (Fig. 50) *canthariphilus*
- Sternum of retracted abdominal segment of male without fringe of soft spines 3
- 3 Sternum of retracted abdominal segment of male consists of a pair of sclerotized slender angular hooks pointing backwards (Figs 57, 60 and 63) 4
- Sternum of retracted abdominal segment of male otherwise 6
- 4 Median lobe of aedeagus with short dorsal hook immediately proximal to genital opening (Figs 59 and 64) 5
- Median lobe of aedeagus without dorsal hook immediately proximal to genital opening (Fig. 55) *scotti*
- 5 Interspicular sclerite oval, apically split into two for $\frac{2}{3}$ of its length (Fig. 58) *pallidithorax*
- Interspicular sclerite broadly triangular, mainly sclerotized at the distal margin (Fig. 66) *firmani*
- 6 Sternum of retracted abdominal segment of male consists of a pair of thin broad plates, each with a short subapical pigmented spine (Fig. 68); median lobe of aedeagus with small pointed tooth immediately proximal to genital opening (Fig. 67) . . . *capeneri*
- Sternum of retracted abdominal segment of male consists of a pair of broad sharply pointed sclerites (Fig. 77); median lobe of aedeagus slender and simple (Fig. 75) *fontium*

Anthicus (Aulacoderus) mogotoensis spec. nov., Figs 46–47

Size. Length 2,10 mm (1,94–2,22); width over broadest part of elytra 0,73 mm (0,70–0,75).

Head. Glossy, very dark testaceous to black; posterior arch broadly transverse. Punctures distinct with dark procumbent hairs. Eyes bulging.

Prothorax. Glossy, dark testaceous but with posterior third lighter; broader than long, slightly broader than head. Shoulders angular, each with long erect lateral hair; another pair of erect lateral hairs half-way between shoulders and lateral constrictions and also a pair on dorsal surface. Punctures as on head, with dark recumbent hairs but indistinct on posterior third. Lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, not connected by a transverse groove or depression.

Elytra. Glossy, dark testaceous with two pairs of lighter maculae: anterior pair behind shoulders, sometimes only showing near lateral margin, posterior pair behind middle, reaching median suture and almost reaching lateral margin. Punctures distinct, those near median suture with dark margin; with dark recumbent hairs but with light hairs on the anterior maculae; with a number of erect or semi-erect hairs implanted in light transparent punctures. In male with small apical point and short round notch.

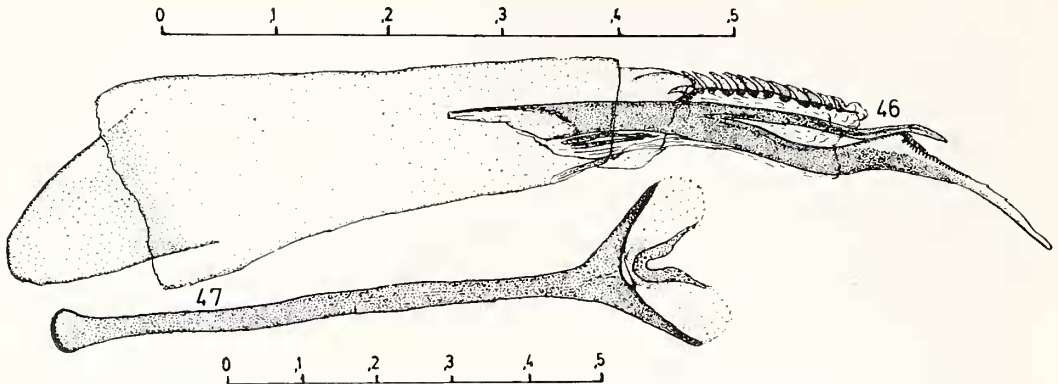
Wings. Fully developed.

Antennae. Rather slender, light testaceous but three apical segments broader and darker; last segment shorter than two preceding ones together.

Legs. Testaceous, coxae and femora darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 46): median lobe elongate with long apical point and long subapical genital opening with beaded margin; with pointed dorsal branch, attached to proximal half of median lobe and extending to half-way the length of genital opening; connecting membrane with dorsal row of about 14 teeth; tegmen with basal piece about six times as long as apical piece. Retracted segment: tergum horseshoe-shaped with dark hairy apex, with dark transverse line and a more proximal parallel row of fenestrae; sternum consisting of a pair of elongate plates. Spiculum gastrale (Fig. 47) with short diverging Y-arms between which lies a U-shaped interspicular sclerite. Last exposed sternum with small and shallow apical indentation.



Figs 46-47. A. (*A.*) *mogotoensis* spec. nov. 46: aedeagus. 47: spiculum gastrale of male.

MATERIAL EXAMINED. South Africa: Mogoto, Zebediela [2429AC], 24.x.1979, to meloid bait, Holotype ♂, Paratypes 4 ♂♂, (M. W. Mansell) (AMSA), Paratypes 2 ♂♂ (M. W. Mansell) (NCI).

Anthicus (Aulacoderus) canthariphilus spec. nov., Figs 48-52

Size. Length 2,20 mm (1,80-2,53); width over broadest part of elytra 0,84 mm (0,73-0,91).

Head. Glossy, testaceous; posterior arch broadly round; punctures well spaced with dark procumbent hairs. Eyes small and bulging.

Prothorax. Glossy, slightly lighter than head; broader than long, as broad as head. Shoulders sloping with pointed lateral angles with erect hair; a second pair of erect hairs laterally between shoulders and base. Punctures as on head but scarce on basal area; hairs recumbent.

Elytra (Fig. 51). Glossy, light testaceous with dark area in the middle, not reaching median suture nor lateral margins, apex also darker. Punctures well spaced with fine recumbent hairs and a number of longer erect and semi-erect hairs.

Wings. Fully developed.

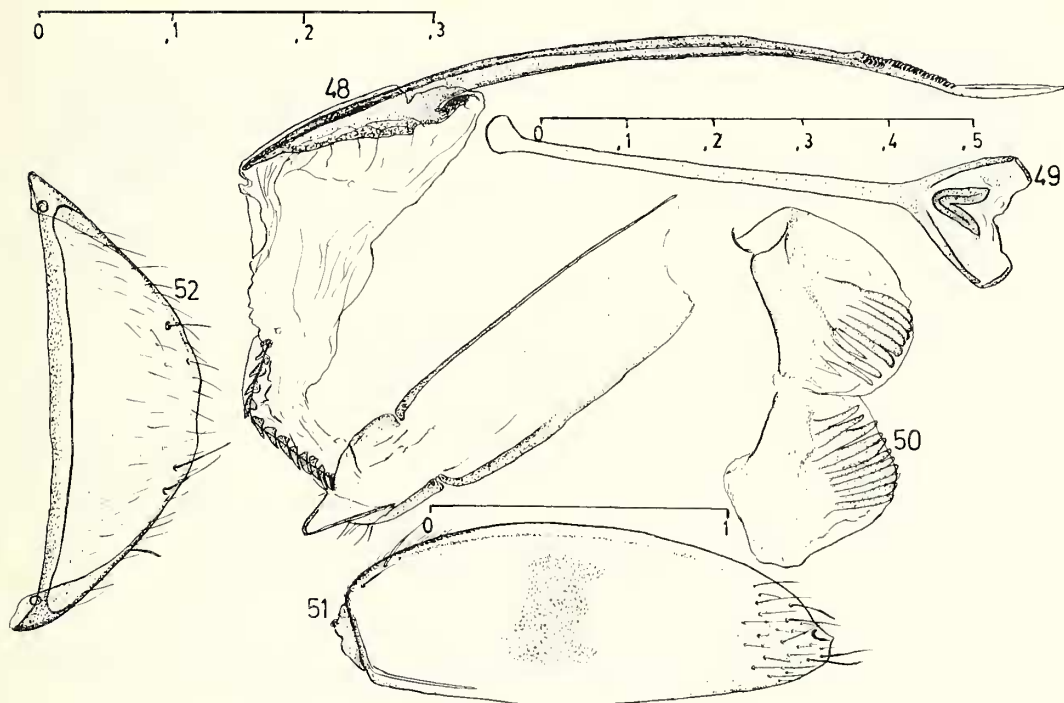
Antennae. Light testaceous, last three segments darker, especially last segment but its tip is light; last three segments broader; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Light testaceous to testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 48): median lobe long and slender, ventrally concave; with long apical point and elongate subapical genital opening with beaded margin; connecting membrane with dorsal row of 13-16 single teeth; tegmen: apical piece with pointed apex; basal piece two and a half times as long as apical piece. Retracted segment: tergum apically round with proximal transverse row of fenestrae and dark stippled transverse line between fenestrae and apex; sternum (Fig. 50) consisting of pair of sclerites with fringe of 8-12 broad spines on dorsal surface; the number of these spines may vary even between right and left side in one specimen. Spiculum gastrale (Fig. 49) with V-shaped interspicular sclerite. Last exposed sternum (Fig. 52) apically flat.

MATERIAL EXAMINED. South Africa: Grahamstown, Rhodes University grounds [3326BC], 7.x.1952, to meloid bait, Holotype ♂, (J. C. van Hille) (AMSA); Grahamstown [3326BC], Rhodes University Grounds, Belmont Valley, Howieson's Poort, Mosslands, to meloid bait,



Figs 48-52. A. (*A.*) *canthariphilus* spec. nov. 48: aedeagus. 49: spiculum gastrale of male. 50: sternum of retracted abdominal segment of male. 51: elytron of male. 52: last exposed abdominal sternum of male.

Paratypes 86 ♂♂, (J. C. van Hille) (AMSA); Stutterheim [3227CB], near Kalogha Forest 21.ii.1954, Paratypes 2 ♂♂, (E. McC. Callan) (AMSA); Bedford [3226CA], Kelvinside, Cowie Valley, to meloid bait, Paratypes 12 ♂♂, (J. C. van Hille) (AMSA); Sedgfield [3422BB], to meloid bait, Paratype 1 ♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) scotti spec. nov., Figs 53-57

Size. Length 2,15 mm; width over broadest party of elytra 0,75 mm.

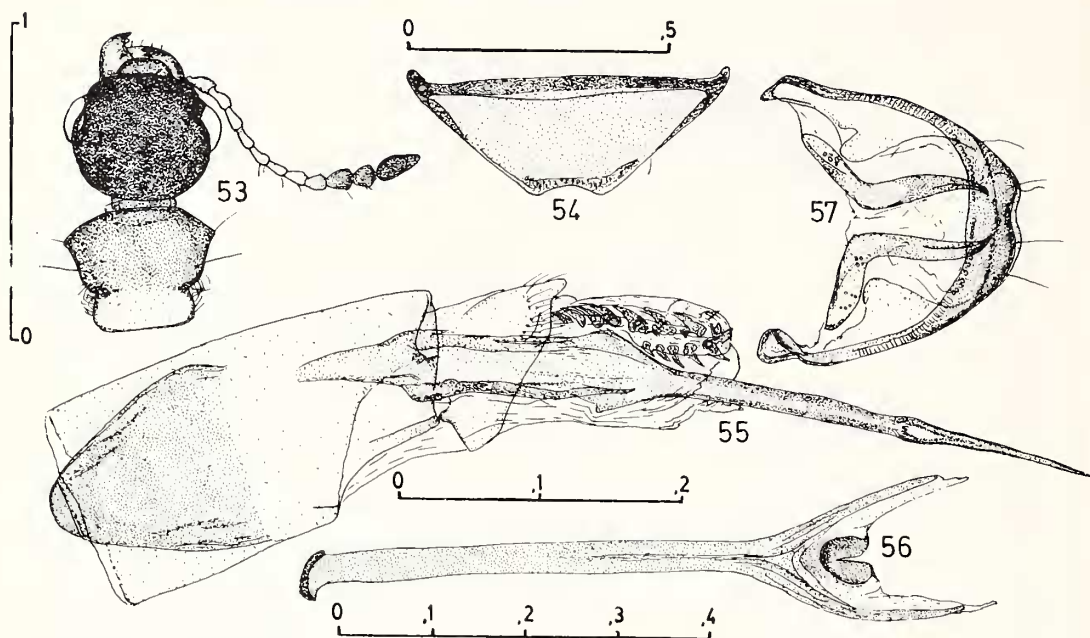
Head (Fig. 53). Glossy, black; posterior arch broadly round; punctures with fine procumbent hairs. Eyes bulging.

Prothorax (Fig. 53). Glossy, light testaceous, lighter at base; as long as broad, as broad as head. Shoulders sloping, sharply angular with a long erect hair each; second pair of erect hairs half-way between shoulders and base. Punctures as on head but absent on basal area, with fine recumbent hairs. Lateral constrictions at $\frac{2}{3}$ of the length of the prothorax.

Elytra. Glossy, dark testaceous to black, short and oval; shoulders round and well developed. Punctures near median suture with large dark spot behind each puncture, in some cases whole puncture surrounded by dark area; with fine recumbent hairs; a number of erect hairs implanted in larger punctures. Male with small apical point and oblique notch.

Wings. Fully developed.

Antennae (Fig. 53). Testaceous, last three segments darker and broader; last segment as long as two preceding ones together.



Figs 53–57. *A. (A.) scotti* spec. nov. 53: head and prothorax. 54: last exposed abdominal sternum of male. 55: aedeagus. 56: spiculum gastrale of male. 57: retracted abdominal segment of male.

Legs. Testaceous, coxae darker, especially of hind legs.

Undersurface. Thorax dark testaceous, abdomen black.

Male abdomen. Aedeagus (Fig. 55): median lobe: proximal half rather broad, apical half slender with long, finely pointed apex; genital opening subapical, narrowly oval with finely beaded margin; connecting membrane with dorsal row of 15 teeth of which the middle ones have a small additional tooth on each side; tegmen light in colour and slightly sclerotized; basal piece three times as long as apical piece; basal cap darker. Retracted segment (Fig. 57): tergum apically slightly indented, with subapical transverse row of fenestrae, interrupted in median area; sternum consisting of a pair of inwards and backwards pointing hooks. Spiculum gastrale (Fig. 56) Y-shaped, with small dark interspicular sclerite. Last exposed sternum (Fig. 54) with shallow apical indentation.

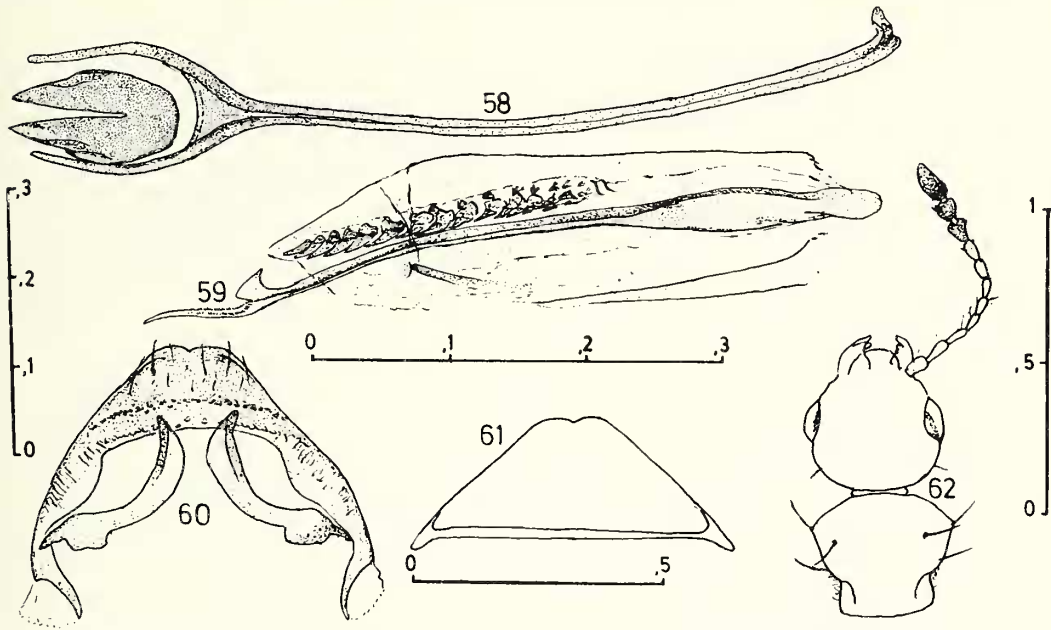
MATERIAL EXAMINED. South Africa: 1929–290, Holotype ♂, (Dr Hugh Scott) (BMNH).

Anthicus (Aulacoderus) pallidithorax spec. nov., Figs 58–62

Size. Length 2.04 mm (1.87–2.07); width over broadest part of elytra 0.72 mm (0.69–0.75).

Head (Fig. 62). Glossy, dark testaceous; posterior arch broadly round; with pair of lateral erect hairs half-way between eyes and neck. With fine punctures with short procumbent hairs. Eyes small, only slightly bulging.

Prothorax (Fig. 62). Glossy, light testaceous to testaceous; broader than long, slightly broader than head; front round with angular shoulders, each with long erect hair; other erect hairs, implanted in large punctures, laterally between shoulder and base and dorsally on ante-



Figs 58-62. A. (*A.*) *pallidithorax* spec. nov. 58: spiculum gastrale of male. 59: aedeagus. 60: retracted abdominal segment of male. 61: last exposed abdominal sternum of male. 62: head and prothorax.

rior half. Other punctures fine with fine recumbent hairs. Lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with fine long hairs.

Elytra. Glossy, dark testaceous with vaguely outlined lighter areas on shoulders and behind middle. Densely punctured with grey recumbent hairs and a number of erect and semi-erect longer hairs, implanted in larger punctures.

Wings. Fully developed.

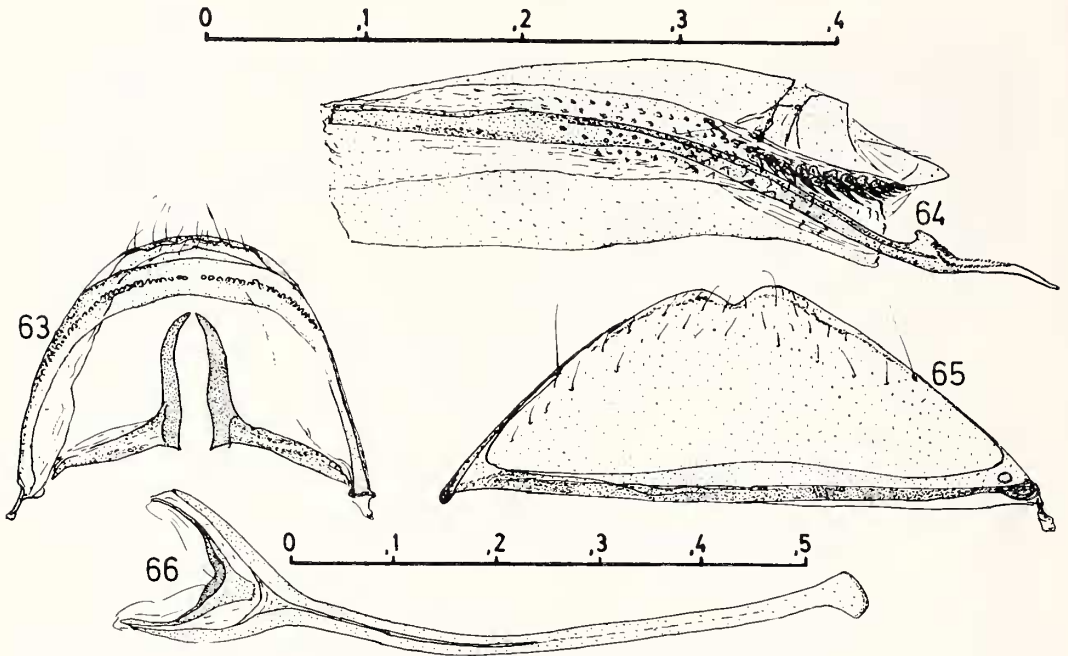
Antennae (Fig. 62). Light testaceous, apical three segments darker and broader; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, thorax lighter than abdomen.

Male abdomen. Aedeagus (Fig. 59): median lobe very slender with broad forward pointing hook immediately proximal to narrow genital opening; connecting membrane with dorsal row of about 15 teeth of which those nearest to attachment to base of median lobe occur in transverse rows of three; tegmen: basal piece more than three times as long as pointed apical piece. Retracted segment (Fig. 60): tergum rather broad with transverse row of fenestrae; sternum consisting of a pair of curved pointed sclerites. Spiculum gastrale (Fig. 58) with oval interspicular sclerite which is split for more than two thirds of its length by an apical incision. Last exposed sternum (Fig. 61) rather long with small apical incision.

MATERIAL EXAMINED. South Africa: Natal, Van Reenen [2829AD], xii.1926, Holotype ♂, Paratypes 7 ♂♂, (R. E. Turner) (BMNH); Natal, Hilton Road [2930CB], i.1954, Paratype ♂, (P. Graham) (AMSA); Natal, Tweedie [2930AC], i.1948, Paratype ♂, (J. Tully) (AMSA).



Figs 63-66. A. (*A.*) *firmani* spec. nov. 63: retracted abdominal segment of male. 64: aedeagus. 65: last exposed abdominal sternum of male. 66: spiculum gastrale of male.

Anthicus (Aulacoderus) firmani spec. nov., Figs 63-66

Size. Length 1,87 mm (1,70-2,00); width over broadest part of elytra 0,73 mm (0,65-0,78).

Head. Somewhat glossy, testaceous to dark testaceous; posterior arch round; punctures distinct with fine procumbent hairs. Eyes with narrow black margin, slightly bulging.

Prothorax. Glossy, testaceous; broader than long, as broad as head. Shoulders sloping and angular and with another pair of lateral blunt angles between shoulders and base; each angle with long erect hair. Punctures closer than on head, with fine recumbent hairs but posterior region without punctures and hairs. Lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with fine long hairs.

Elytra. Somewhat glossy, lighter than prothorax; narrowing from anterior third to apex; with transverse dark band in front of middle, apex also darker. Punctures less close than on prothorax, with recumbent hairs and a number of longer semi-erect hairs, especially on posterior half.

Wings. Fully developed.

Antennae. Testaceous, apical three segments hardly darker but slightly broader than proximal segments; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, thorax lighter than abdomen.

Male abdomen. Aedeagus (Fig. 64): median lobe slender, with long apical point; genital opening subapical, with beaded margin and proximal forward pointing hook; connecting mem-

brane with dorsal row of about 15 teeth, each with a small denticle on each side; near attachment to base of median lobe is an area with small pustules; tegmen: apical piece dorsally pointed, basal piece three times as long as apical piece. Retracted segment (Fig. 63): tergum with flat apex, fine transverse dark line and a more proximal transverse row of fenestrae; sternum consisting of a pair of inwards and backwards pointing hooks. Spiculum gastrale (Fig. 66) lightly sclerotized, with interspicular sclerite. Last exposed sternum (Fig. 65) with small round apical indentation.

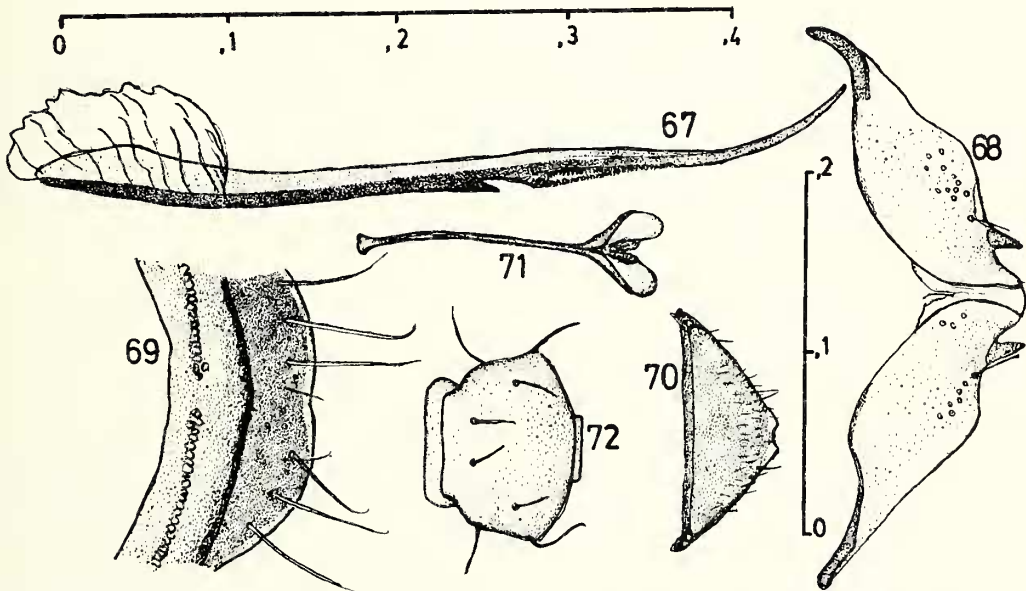
MATERIAL EXAMINED. South Africa: Blaauwkrans, Sandyford (now Elysium) [2829DD], Harrismith, under debris in donga, 10.ii.1894, Holotype ♂, (G. A. K. Marshall) (BMNH). Paratypes unlabelled (except one which has a label '*Anthicus* det. G. E. Bryant'), 6 specimens, (NCI).

Anthicus (Aulacoderus) capeneri spec. nov., Figs 67-72

Size. Length 2,11 mm (2,00-2,25); width over broadest part of elytra 0,78 mm (0,73-0,82).

Head. Glossy, very dark testaceous to black; posterior arch broadly round, laterally diverging to eyes; with fine punctures with short procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 72). Glossy, testaceous to dark testaceous; broader than long, broader than head; front round with angular shoulders, each with an erect hair; another pair of erect hairs laterally half-way between shoulders and posterior margin and two more pairs of erect hairs on dorsal surface, implanted in larger punctures than those of recumbent hairs. Punctures closer than on head but fewer and smaller at base, with fine short hairs. Lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, with fine hairs and connected by transverse dorsal groove.



Figs 67-72. *A. (A.) capeneri* spec. nov. 67: median lobe of aedeagus. 68: sternum of retracted abdominal segment of male. 69: detail of tergum of retracted abdominal segment of male. 70: last exposed abdominal sternum of male. 71: spiculum gastrale of male. 72: prothorax.

Elytra. Somewhat glossy, testaceous to dark testaceous with two pairs of lighter maculae, vague in outline; elongate and narrow. Punctures more widely spaced than on prothorax, with recumbent hairs, longer than on prothorax and with a number of erect hairs implanted in larger punctures than those of recumbent hairs.

Wings. Fully developed.

Antennae. Testaceous, apical three segments darker and broader; last segment shorter than two preceding ones together.

Legs. Testaceous, distal half of femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 67) slender, with long apical point; genital opening subapical, elongate with finely beaded margin and small distally pointing hook, proximal to genital opening; connecting membrane with dorsal row of 12 single teeth; tegmen slightly sclerotized with basal piece about three times as long as apical piece. Retracted segment: tergum (Fig. 69) with subapical transverse dark line and parallel row of fenestrae, interrupted in median area; sternum (Fig. 68) consisting of a pair of plates, each with dark short subapical spine. Spiculum gastrale (Fig. 71) with small interspicular sclerite. Last exposed sternum (Fig. 70) rather long, with shallow apical indentation.

MATERIAL EXAMINED. South Africa: Pretoria, Fountains [2528CC], 31.x.1951. Holotype ♂, Paratypes 5 ♂♂, (A. L. Capener) (AMSA).

Anthicus (Aulacoderus) fontium spec. nov., Figs 73–78

Size. Length 1,96 mm (1,83–2,13); width over broadest part of elytra 0,82 mm (0,72–0,88).

Head. (Fig. 73). Glossy, dark testaceous to black; posterior arch round. Punctures with narrow dark margin and short procumbent hairs; four pairs of longer erect hairs: one pair laterally half-way between eyes and neck and three pairs on dorsal surface. Eyes bulging.

Prothorax (Fig. 73). Glossy, testaceous; broader than long, almost as broad as head; shoulders sloping and angular, each with an erect lateral hair; another pair of erect lateral hairs half-way between shoulders and base and three pairs on dorsal surface. Punctures fine with recumbent hairs, punctures of erect hairs larger. Lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with fine hairs.

Elytra. Glossy, usually plain dark testaceous to black but in some specimens with somewhat vague indication of lighter area on shoulders and at apex (Fig. 74); females often less dark than males. Punctures fine with fine recumbent hairs; larger punctures with erect or semi-erect hairs distributed over the whole surface.

Wings. Fully developed.

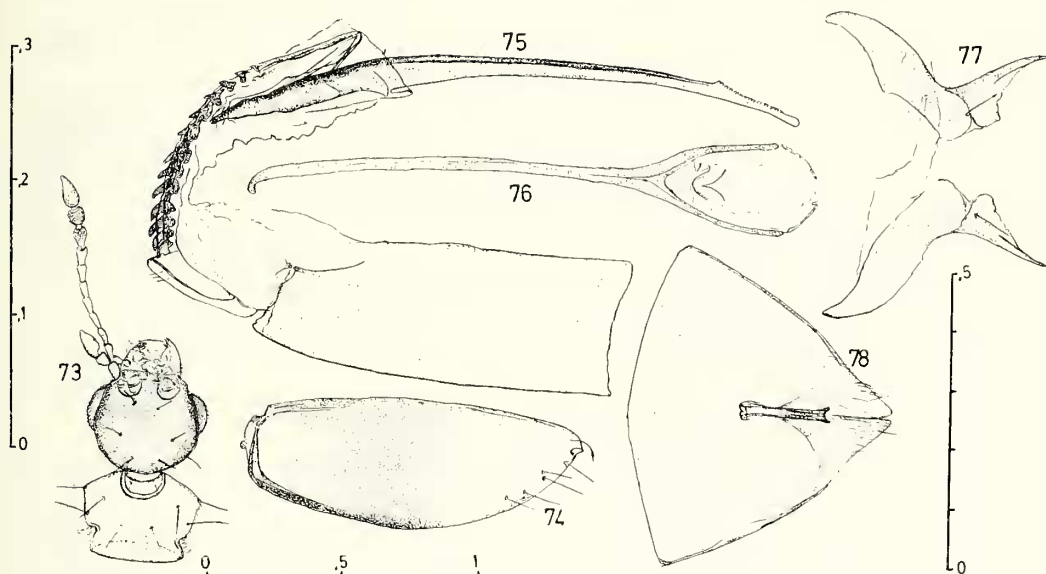
Antennae. (Fig. 73). Testaceous, three apical segments darker and somewhat broader; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 75): median lobe slender, ventrally slightly concave; with short apical point and elongate subapical genital opening with finely beaded margin; connecting membrane with dorsal row of about 12 single teeth; tegmen lightly sclerotized with basal piece three times as long as apical piece. Retracted segment: tergum with flatly rounded apex with about seven stiff hairs; with transverse row of fenestrae and a more proximal parallel row of slightly larger fenestrae which is shortly interrupted in the middle; sternum consisting of pair of curved sclerites ending in sharp point (Fig. 77). Spiculum gastrale (Fig. 76) with small V-shaped interspicular sclerite. Last exposed sternum with broad shallow apical indentation.

Female abdomen. Last exposed tergum (Fig. 78) triangular with apex divided by a slit leading into a margined groove on ventral surface.



Figs 73-78. A. (*A.*) *fontium* spec. nov. 73: head and prothorax. 74: clytron of male. 75: aedeagus. 76: spiculum gastrale of male. 77: sternum of retracted abdominal segment of male. 78: tergum of last exposed abdominal segment of female.

MATERIAL EXAMINED. South Africa: Pretoria, Fountains [2528CC], 15.i.1952, Holotype ♂, (A. L. Capener) (AMSA); Rustenburg, Henops River [2527DD], 27.xii.1950, Paratype ♂, (A. L. Capener) (AMSA); Pretoria [2528CA], xii.1951, Paratypes 2 ♂♂, (B. Smit) (AMSA); 26 km west of Pretoria [2528DB], 26.xii.1952, Paratypes 2 ♂♂, (C. N. Smithers) (AMSA); Pretoria, Fountains [2528CC], 9.i.1952, Paratypes 21 ♂♂, 28 ♀♀, (A. L. Capener) (AMSA); Pretoria, Irene [2528CC], 30.i.1952, Paratypes 2 ♂♂, 21 ♀♀, (A. L. Capener) (AMSA); Pretoria, Fountains [2528CC], 31.i.1961, Paratypes 9 ♂♂, 21 ♀♀, (A. L. Capener) (AMSA).

SECTION 5

The species of this section have a pair of parallel sclerites which lie parallel to and dorsal to the median lobe of the aedeagus. The parallel sclerites are proximally attached to the connecting membrane. The species of this section occur in the four provinces of South Africa, one species in Tanzania and one in Zimbabwe.

Key to the species of Section 5

- 1 Median lobe of aedeagus laterally much flattened, with ventral pointed apex 2
- Median lobe of aedeagus not laterally flattened, not with ventral pointed apex 4
- 2 Teeth of connecting membrane of aedeagus arranged in a dense toothfield near its attachment to base of median lobe, narrowing to a row of single teeth toward attachment to tegmen (Fig. 79) *multidenticulatus*
- Teeth of connecting membrane in single file 3
- 3 Parallel sclerites of aedeagus with a number of ventrally pointing spines on apical quarter (Fig. 84) *bisbimaculatus*
- Parallel sclerites of aedeagus without spines (Fig. 88) *montanus*

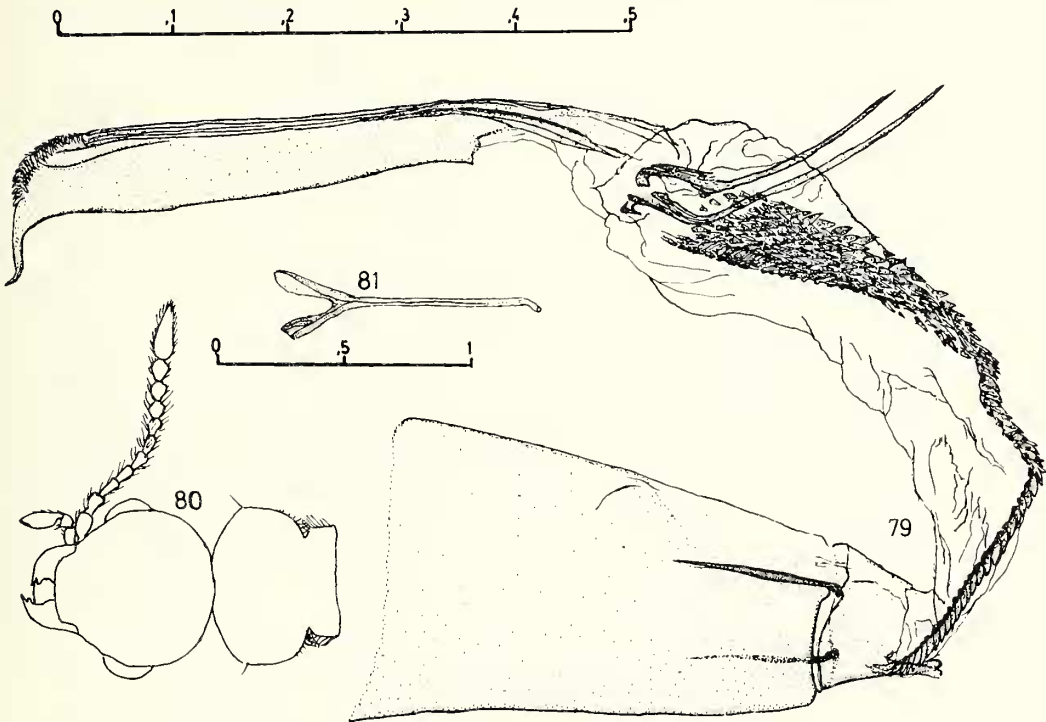
- 4 Tergum of retracted abdominal segment of male with fringe of dark spines (Fig. 94) *ruficeps*
 — Tergum of retracted abdominal segment of male without spines 5
- 5 Tergum of last exposed abdominal segment of male with apical fringe of short spiny hairs (Fig. 98) *magaliensis*
 — Tergum of last exposed abdominal segment of male without apical fringe of hairs 6
- 6 Sternum of retracted abdominal segment of male consisting of a single narrow sclerite with apical indentation (Fig. 106) *draconis*
 — Sternum of retracted abdominal segment of male consisting of a pair of sclerites 7
- 7 Teeth of connecting membrane of aedeagus arranged in a dense dorsal toothfield near attachment of connecting membrane to median lobe, gradually narrowing to a row of single teeth toward attachment to tegmen (Fig. 108) *turneri*
 — Teeth of connecting membrane of aedeagus not arranged in a dense toothfield 8
- 8 Sternite of retracted abdominal segment of male consisting of a pair of bunches of spiny hairs (Fig. 115) *robustissimus*
 — Sternite of retracted abdominal segment of male otherwise 9
- 9 Parallel sclerites of aedeagus longer than median lobe 10
 — Parallel sclerites of aedeagus shorter than, or as long as median lobe 11
- 10 Elytra dark with two pairs of light maculae (Fig. 117); wings fully developed *vansoni*
 — Elytra testaceous, without colour pattern; wings absent *apterus*
- 11 Connecting membrane of aedeagus with about 30 small teeth, each one implanted on distal margin of a pigmented plate (Fig. 127) *ranchhodi*
 — Teeth of connecting membrane of aedeagus not implanted on pigmented plates 12
- 12 Row of teeth of connecting membrane of aedeagus surrounded by dark pustules 13
 — Row of teeth of connecting membrane of aedeagus not surrounded by dark pustules. 14
- 13 Teeth of connecting membrane of aedeagus large and irregularly arranged, surrounded by a field of dark pustules (Fig. 129) *pustulatus*
 — Teeth of connecting membrane of aedeagus small, arranged in short dorsal row, surrounded by dark pustules of irregular shape (Fig. 131) *forsythi*
- 14 Parallel sclerites of aedeagus shorter than half the length of median lobe 15
 — Parallel sclerites of aedeagus between half and full length of median lobe 16
- 15 Parallel sclerites of aedeagus with dorsal saw-tooth edge (Fig. 137) *humicola*
 — Parallel sclerites of aedeagus with smooth edge (Fig. 140) *quietus*
- 16 Parallel sclerites of aedeagus without hooks or spines 17
 — Parallel sclerites of aedeagus with hooks or spines 18
- 17 Last exposed abdominal sternum of male with flat apex (Fig. 148) *pondo*
 — Last exposed abdominal sternum of male with sharp apical indentation (Fig. 152) *marginatus*
- 18 Teeth of connecting membrane of aedeagus in single file (Fig. 155) *rustenburgensis*
 — Teeth of connecting membrane of aedeagus in transverse rows of three near attachment of connecting membrane to base of median lobe, in single file near attachment to tegmen (Fig. 164) *gessi*

Anthicus (Aulacoderus) multidenticulatus spec. nov., Figs 79–81

Size. Length 2,30 mm (2,25–2,35); width over broadest part of elytra 0,85 mm (0,83–0,88).

Head (Fig. 80). Somewhat glossy, black; posterior margin round; punctures fine with short dark procumbent hairs. Eyes bulging.

Prothorax (Fig. 80). Glossy, dark testaceous to black, basal area lighter; broader than long, narrower than head. Shoulders sloping and somewhat angular, with a pair of lateral erect



Figs 79-81. A. (*A.*) *multidenticulatus* spec. nov. 79: aedeagus. 80: head and prothorax. 81: spiculum gastrale of male.

hairs at greatest width. Punctures larger than on head, sparser at base, with dark recumbent hairs. Lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, with fine long hairs.

Elytra. Somewhat glossy, black with two pairs of light maculae; punctures rather close, with dark margin and dark recumbent hairs, but with light hairs on anterior maculae forming a transverse whitish hairband, shortly interrupted in the middle; dark hairs on posterior maculae.

Wings. Fully developed.

Antennae (Fig. 80). Testaceous; proximal two and apical three or four segments dark testaceous to black and broader; in some specimens the whole antenna is dark testaceous or black. Last segment longer than two preceding ones together.

Legs. Testaceous; coxae, femora and distal tarsal segments darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 79): Median lobe straight, laterally broad and flat, with long genital opening with fringed margin; parallel sclerites slender and pointed, less than half the length of median lobe; connecting membrane with dorsal row of teeth occurring in single file near attachment to tegmen but toward attachment to base of median lobe forming a field of teeth; tegmen: basal piece more than three times as long as apical piece which ends in a pair of blunt dorsal lobes. Retracted segment: tergum with round apex and proximal transverse row of fenestrae lying closely applied against a more proximal transverse sclerotised line; transverse line of close dark points between fenestrae and apex; sternum consisting of a pair of thin nar-

row triangular plates, not reaching median line. Spiculum gastrale (Fig. 81) Y-shaped with rather broad arms. Last exposed sternum with short sharp apical indentation with two hairs on each side.

MATERIAL EXAMINED. South Africa: Grahamstown, Botanical Gardens, [3326BC], to meloid bait, 25.x.1977, Holotype ♂, Paratype ♂, (J. C. van Hille) (AMSA); same locality 26.x.1977, Paratypes 3 ♂ ♂, (J. C. van Hille) (AMSA); same locality 26.x.1977, Paratypes 3 ♂ ♂, (J. C. van Hille) (AMSA); same locality ix-x.1981, Paratypes 23 ♂ ♂, (J. C. van Hille) (AMSA); Albany District [3326BC], 10.viii.1948, Paratype 1 ♂, (S. H. Kahn) (AMSA).

Anthicus (Aulacoderus) bisbimaculatus spec. nov., Figs 82-86

Size. Length 2.48 mm (2.20-2.65); width over broadest part of elytra 0.95 mm (0.92-0.98).

Head (Fig. 82). Glossy, dark testaceous to black; posterior arch broadly round. Punctures fine and well spaced with dark procumbent hairs. Eyes small, somewhat bulging.

Prothorax (Fig. 82). Glossy, dark testaceous to black with lighter posterior area; broader than long, as broad as head; shoulders sloping, with two angles on each side and a lateral erect hair on each angle. Punctures closer than on head but reduced on posterior area. Lateral constrictions at $\frac{1}{3}$ of the length of prothorax, connected by a dorsal basal groove.

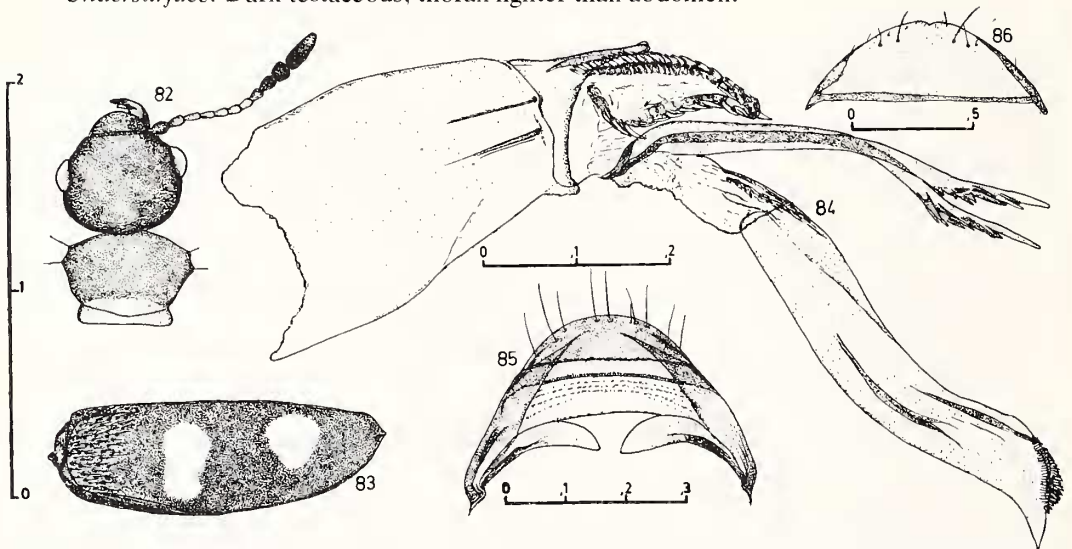
Elytra (Fig. 83). Glossy, black with two pairs of light maculae reaching neither median suture nor lateral margins. Punctures coarser and more widely spaced than on prothorax, with long dark hairs but with light hairs on anterior maculae; with some erect hairs, especially near lateral margins.

Wings. Fully developed.

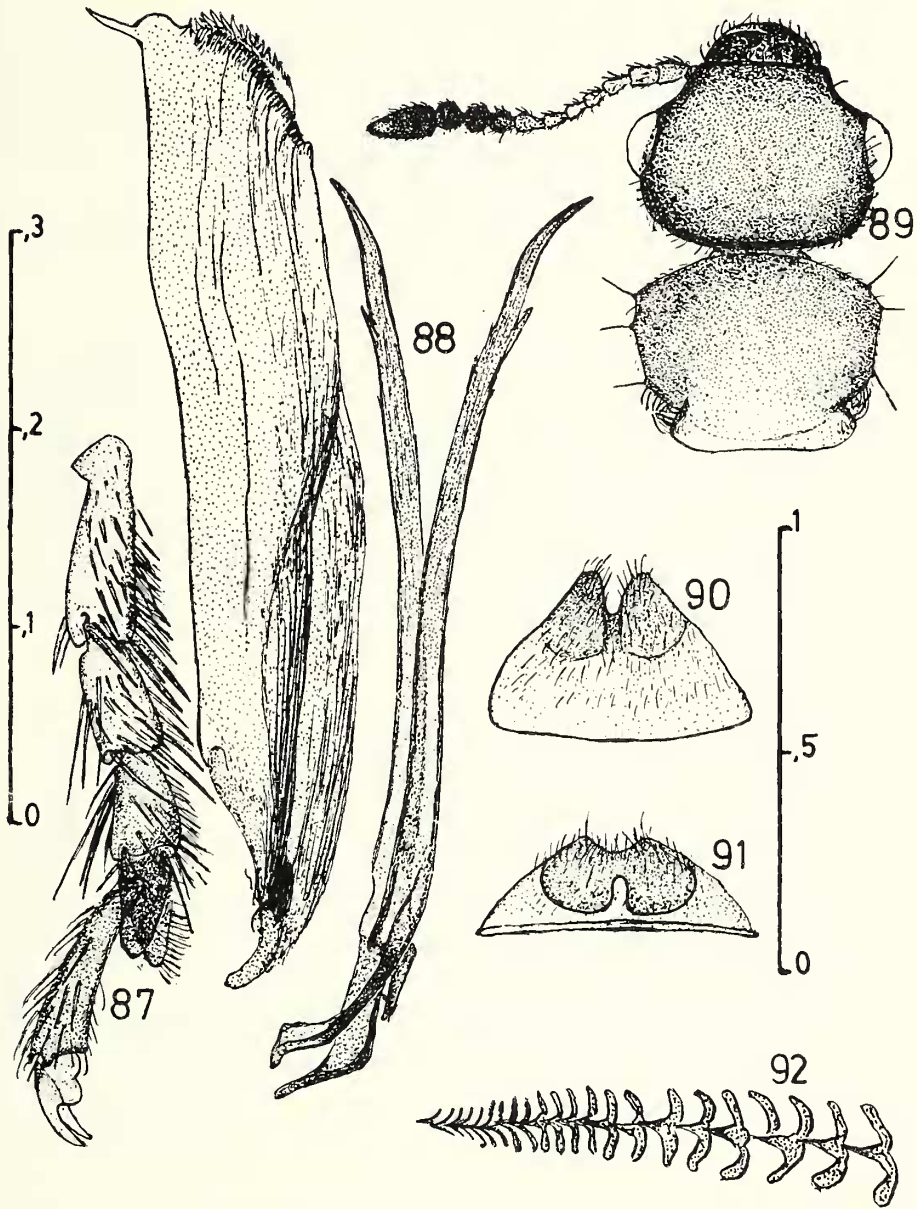
Antennae (Fig. 82). Testaceous to dark testaceous, apical 4-5 segments gradually darker and broader; last segment longer than two preceding ones together.

Legs. Testaceous; coxae and femora darker; tarsi hairy.

Undersurface. Dark testaceous, thorax lighter than abdomen.



Figs 82-86. A. (*A.*) *bisbimaculatus* spec. nov. 82: head and prothorax. 83: elytron of male. 84: aedeagus. 85: retracted abdominal segment of male. 86: last exposed abdominal sternum of male.



Figs 87-92. A. (*A.*) *montanus* spec. nov. 87: tarsus. 88: median lobe of aedeagus with parallel sclerites. 89: head and prothorax. 90: last exposed abdominal tergum of female. 91: last exposed abdominal sternum of male. 92: teeth of connecting membrane of aedeagus.

Male abdomen. Aedeagus (Fig. 84): median lobe laterally broad and flat; apex with ventral point; genital opening subapical with beaded margin surrounded by short spines; parallel sclerites with a number of apical and subapical spines facing ventrally; connecting membrane with about 32 single teeth; tegmen: basal piece three times as long as apical piece which ends in blunt dorsal points. Retracted segment (Fig. 85): tergum with two transverse dark lines, the proximal one with row of fenestrae; sternum consisting of a pair of thin curved plates, not reaching median line. Last exposed sternum (Fig. 86) apically slightly indented.

MATERIAL EXAMINED. South Africa: Drakensberg, Van Reenen [22829AD], x-xi.1926, Holotype ♂, Paratypes 3♂♂, (R. E. Turner) (BMNH); Port St Johns [3129DA], Paratype ♂, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) montanus spec. nov., Figs 87-92

Size. Length 2,44 mm (2,13-2,93); width over broadest part of elytra 1,02 mm (0,95-1,09).

Head (Fig. 89). Glossy, black; posteriorly transverse with round angles to eyes. Punctures prominent with short procumbent hairs. Eyes bulging.

Prothorax (Fig. 89). Glossy, dark testaceous, posterior area lighter; broader than long, narrower than head; with three lateral angles on each side, each with an erect hair. Punctures as on head with short recumbent hairs, scarce on posterior area. Lateral constrictions at $\frac{3}{4}$ of length of prothorax, with long hairs.

Elytra. Glossy, black with two pairs of light maculae; broad, slightly convex, hardly narrowing to apex. Punctures with narrow dark margin and dark spot behind each puncture; hairs dark and recumbent but on the anterior maculae hairs are light and finer; with some erect hairs.

Wings. Fully developed.

Antennae (Fig. 89). Testaceous; proximal two and apical 3-4 segments darker and broader; last segment longer than two preceding ones together.

Legs. Testaceous, femora darker; distal half of tibiae and tarsi (Fig. 87) very hairy.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus: median lobe (Fig. 88) straight, laterally broad and flat, with small ventral apical point; genital opening apical, large with finely grooved margin and small soft spines; parallel sclerites thin, as long as median lobe, appearing fibrous and even somewhat frayed over apical half; connecting membrane with about 28 single dorsal teeth; tegmen: basal piece almost three times as long as apical piece which has two blunt dorsal apical points. Retracted segment: tergum with proximal row of fenestrae and a row of dark points between apex and base; sternum consisting of a pair of narrow triangular plates, not reaching median line. Last exposed sternum slightly but sharply apically indented.

Female abdomen. Last exposed tergum (Fig. 90) triangular with apical indentation leading into a short ventral groove. Last exposed sternum (Fig. 91) with broad shallow indentation and with a duplicate bilobed sclerite on the dorsal surface which easily comes apart when manipulated during mounting.

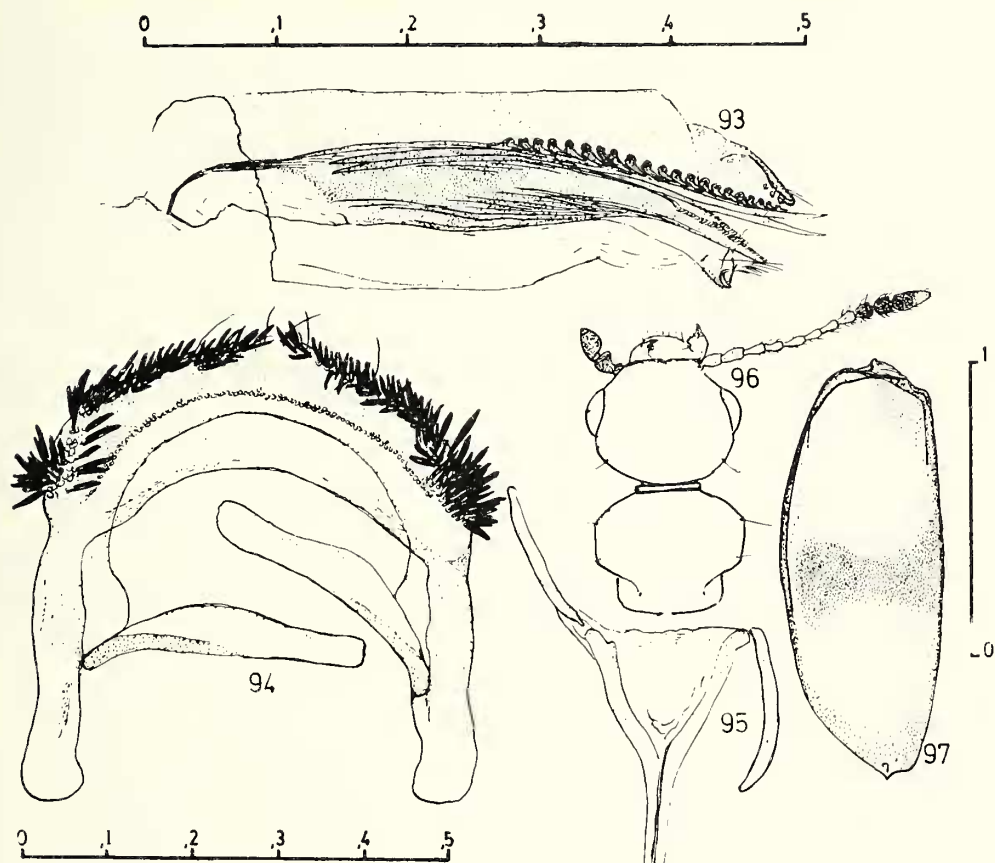
MATERIAL EXAMINED. South Africa: Hogsback [3227CA], 2.i.1952, Holotype ♂, Paratypes 7♂♂, 2♀♀. (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) ruficeps spec. nov., Figs 93-97

Size. Length 2,25 mm; width over broadest part of elytra 0,87 mm.

Head (Fig. 96). Glossy, reddish testaceous; posterior arch almost straight, transverse and broad. Punctures distinct with light procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 96). Reddish testaceous, lighter than head; broader than long, as broad as



Figs 93-97. *A. (A.) ruficeps* spec. nov. 93: aedeagus. 94: retracted abdominal segment of male. 95: apex of spiculum gastrale of male with extra-spicular sclerites. 96: head and prothorax. 97: elytron of male.

head; shoulders sloping and angular and with another pair of angles halfway between shoulders and base, each angle with a long and erect hair, lateral constrictions at $\frac{3}{4}$ of the length of prothorax, with long hairs which form a hairy dorsal band parallel to base but is shortly interrupted in middle. Punctures as on head with recumbent hairs but reduced at base.

Elytra (Fig. 97). Less reddish than head and prothorax, dark testaceous with two pairs of light maculae which extend to, and are continuous along lateral margins. Punctures more widely spaced than on prothorax, with recumbent hairs of the same colour as the area on which they are implanted.

Wings. Fully developed.

Antennae (Fig. 96). Testaceous, apical four segments darker and broader; last segment shorter than two preceding ones together.

Maxillary palps. Dark testaceous.

Legs. Testaceous.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 93): median lobe with elongate apical genital opening with beaded margin; parallel sclerites slender and sharply pointed, as long as median lobe; connecting membrane with about 20 dark single teeth; tegmen: basal piece five times as long as apical piece which has some dorsal and ventral apical hairs. Retracted segment (Fig. 94): tergum with bluntly pointed apex and apical fringe of dark spines; row of fenestrae parallel to distal margin; sternum consisting of a pair of narrow plates. Spiculum gastrale (Fig. 95) with a pair of narrow extraspicular sclerites at apex of Y-arms. Last exposed sternum with small sharp indentation.

MATERIAL EXAMINED. South Africa: Rustenburg [2527CA], xi.1952, Holotype ♂, (A. L. Capener) (AMSA).

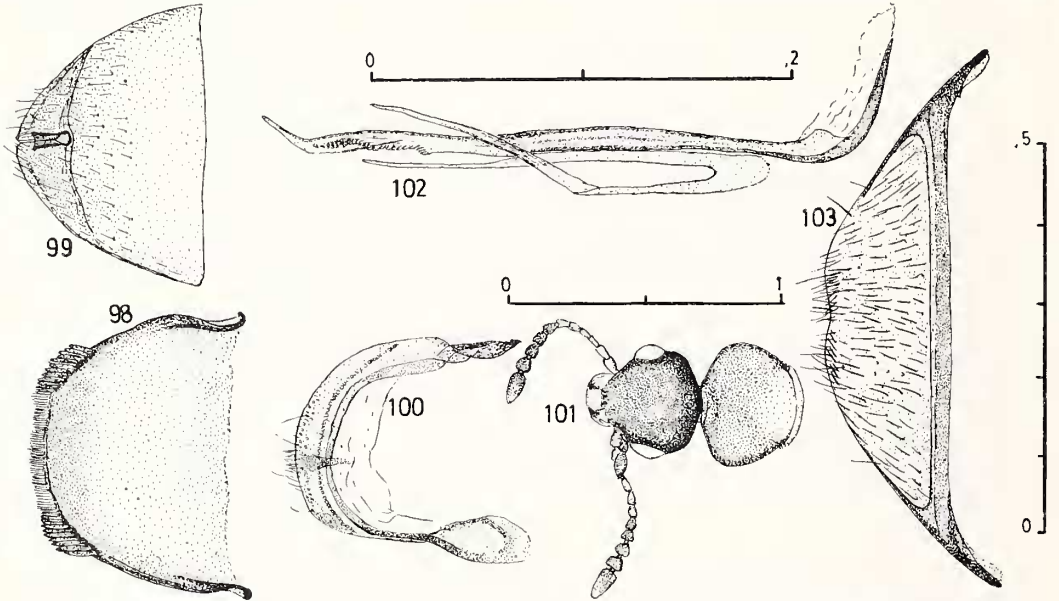
Anthicus (Aulacoderus) magaliensis spec. nov., Figs 98–103

Size. Length 1,82 mm (1,62–2,19); width over broadest part of elytra 0,76 mm (0,65–0,89).

Head (Fig. 101). Glossy, dark testaceous to black, front part slightly lighter; posterior arch broadly round. Punctures distinct with short hairs pointing transversely to median line. Eyes bulging.

Prothorax (Fig. 101). Somewhat glossy, dark testaceous, slightly lighter than head; posterior area lighter; broader than long, broader than head. Shoulders round. Punctures denser than on head but reduced in basal area, with short recumbent hairs. Lateral constrictions inconspicuous, without long hairs.

Elytra. Rather glossy, dark testaceous to black, darker than prothorax; shoulders well developed. Punctures fine, less dense than on prothorax, with fine recumbent hairs and a number of erect hairs along posterior half of lateral margins. Male with small apical point and oblique notch.



Figs 98–103. *A. (A.) magaliensis spec. nov.* 98: last exposed abdominal tergum of female. 100: tergum of retracted abdominal segment of male. 101: head and prothorax. 102: median lobe of aedeagus. 103: last exposed abdominal sternum of male.

Wings. Fully developed.

Antennae (Fig 101). Testaceous, apical 4–5 segments darker and gradually broader; last segment as long as two preceding ones together.

Legs. Light testaceous to testaceous; femora slightly darker.

Undersurface. Testaceous to dark testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 102) short and slender with ventrally pointed apex; genital opening subapical and elongate with beaded margin; parallel sclerites thin, shorter than median lobe and fused at base; connecting membrane with about 17 single teeth; tegmen: basal piece five times as long as apical piece which ends in two blunt lobes with a few hairs. Retracted segment: tergum (Fig. 100) with dark triangular median area, transverse row of fenestrae and broad lateral bases; sternum consisting of a pair of elongate curved narrow, almost linear sclerites. Last exposed tergum (Fig. 98) with dense apical fringe of about ten spiny broad hairs on each side and thinner hairs in median area. Last exposed sternum (Fig. 103) with very slight median indentation.

Female abdomen. Last exposed tergum (Fig. 99) with short apical margined groove.

MATERIAL EXAMINED: South Africa: Pretoria, Zilikatsnek [2528CA], 3.x.1931, Holotype ♂, (C. Koch) (AMSA); Pretoria, Wonderboom [2528CA], Paratype ♂, (T. D. A. Cockerell) (AMSA); Pretoria, Magaliesberg [2528DC], 29.ix.1949, Paratypes 12 ♂♂, 11 ♀♀ (C. Koch) (AMSA); Nylsvlei near Nylstroom [2428CB], xii.1979, Paratypes 23 ♂♂, 16 ♀♀, (C. Eardley) (AMSA).

Anthicus (Aulacoderus) draconis spec. nov., Figs 104–107

Size. Length 2,35 mm (2,27–2,88); width over broadest part of elytra 0,88 mm (0,82–1,05).

Head (Fig. 104). Glossy, black; posterior arch broad, with round angles to eyes. Punctures fine with fine grey hairs. Eyes slightly bulging.

Prothorax (Fig. 104). Glossy black; broader than long, broader than head; laterally somewhat angular with three pairs of erect lateral hairs. Punctures fine with fine recumbent hairs. Lateral constrictions at $\frac{1}{3}$ of length of prothorax, with long hairs which also occur on dorsal basal groove connecting lateral constrictions, only median third of groove is without hairs.

Elytra. Glossy, black, usually with vague indication of a lighter area in front of middle, covered with light shiny hairs. Punctures coarser than on prothorax, with recumbent hairs and a number of longer erect hairs.

Wings. Fully developed.

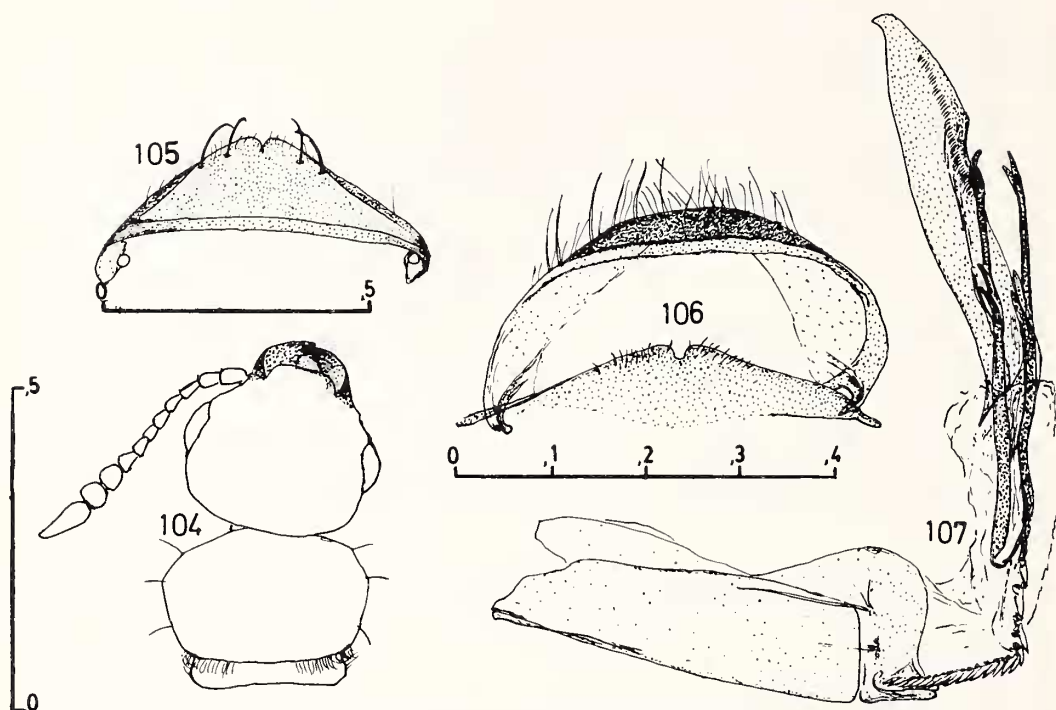
Antennae (Fig. 104). Rather short, dark testaceous, apical 3–4 segments darker and broader; last segment longer than two preceding ones together.

Legs. Testaceous to dark testaceous, femora darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 107): median lobe laterally somewhat flat, with elongate subapical genital opening with beaded margin; parallel sclerites ending in two apical spines of unequal length and two larger spines at distal third; connecting membrane with dorsal row of about 30 single teeth; tegmen: basal piece five times as long as apical piece. Retracted segment (Fig. 106): tergum apically somewhat flat, with dark transverse line separating apical dark region from proximal light region; without row of fenestrae; sternum consisting of a single sclerite with small apical indentation. Last exposed sternum (Fig. 105) apically shortly incised with two sturdy curved hairs on each side.

MATERIAL EXAMINED. South Africa: Natal, Kloof [2930DD], viii–ix.1926, Holotype ♂, Paratype ♂, (R. E. Turner) (BMNH); Natal, Drakensberg, Van Reenen [2829AD], 3 500–6 500 ft, x.1926, Paratypes 3 ♂♂, (R. E. Turner) (BMNH).



Figs 104-107. A. (*A.*) *draconis* spec. nov. 104: head and prothorax. 105: last exposed abdominal sternum of male. 106: retracted abdominal segment of male. 107: aedeagus.

Anthicus (Aulacoderus) turneri spec. nov., Figs 108-111

Size. Length 2,57 mm (2,43-2,67); width over broadest part of elytra 0,94 mm (0,87-1,00).

Head (Fig. 109). Glossy, black; posterior arch broadly round. Punctures fine with procumbent hairs. Eyes bulging.

Prothorax (Fig. 109). Glossy, black; broader than long, broader than head. Shoulders round. Punctures fine with recumbent hairs and four pairs of longer erect hairs on lateral margins. Lateral constrictions shallow, with fine long hairs.

Elytra. Glossy, black with a pair of orange-testaceous maculae on posterior half, reaching neither lateral margins nor median suture; shoulders well developed. Punctures somewhat coarse with recumbent hairs, longer than on prothorax; a few erect hairs.

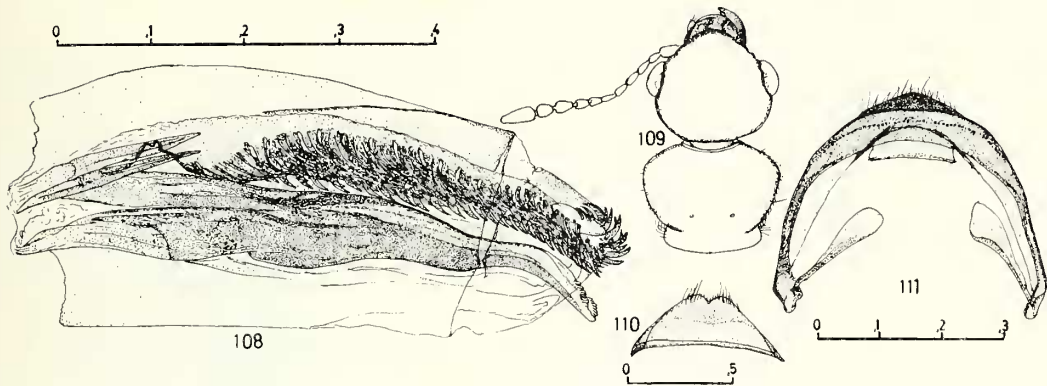
Wings. Fully developed.

Antennae (Fig. 109). Dark testaceous to black; apical 3-4 segments gradually broader; last segment slightly shorter than two preceding ones together.

Legs. Dark testaceous to black, tibiae and tarsi lighter.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 108): median lobe with apical genital opening with beaded margin; parallel sclerites apically pointed, about $\frac{1}{3}$ of length of median lobe; connecting membrane with about 35 transverse rows of 1-7 teeth, numbers decreasing from proximal to distal



Figs 108–111. *A. (A.) turneri* spec. nov. 108: aedeagus. 109: head and prothorax. 110: last exposed abdominal sternum of male. 111: retracted abdominal segment of male.

end; tegmen: basal piece about four times as long as apical piece. Retracted segment (Fig. 111): tergum with bluntly pointed apex; apical area dark, subapical area lighter with transverse row of fenestrae and proximally pointing lip; sternum consists of a pair of short narrow plates. Last exposed sternum (Fig. 110) with sharp apical indentation.

MATERIAL EXAMINED. South Africa: Orange Free State, Harrismith [2829AC], ii-iii.1927, Holotype ♂, Paratypes 9 ♀♀, (R. E. Turner) (BMNH); Witzieshoek [2829DB], 22.ii.1929, Paratype ♂, (Hugh Scott) (BMNH); Willem Pretorius Game Reserve [2827AC], 28.iv.1979, Paratype ♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) robustissimus Pic, Figs 112–115

Anthicus (Aulacoderus) robustissimus Pic, 1913c: 12

Size. Length 1,88 mm (1,72–2,02); width over broadest part of elytra 0,75 mm (0,72–0,80).

Head. Glossy, dark testaceous to black; posterior arch broadly transverse, narrowing to eyes. Punctures close with fine procumbent hairs. Eyes slightly bulging.

Prothorax. Glossy, dark testaceous slightly lighter than head; broader than long, broader than head. Punctures close with fine recumbent hairs. Lateral constrictions close to posterior margin, with long hairs.

Elytra. Glossy, dark testaceous; broad with round shoulders. Punctures more widely spaced than on prothorax, hairs longer.

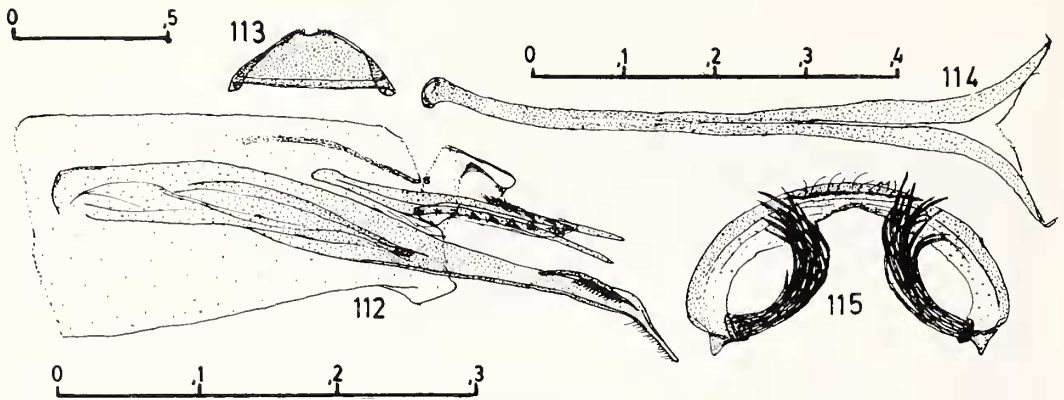
Wings. Fully developed.

Antennae. Testaceous, last three segments darker and broader; last segment as long as two preceding ones together.

Legs. Dark testaceous, tibiae and tarsi lighter.

Undersurface. Very dark testaceous, thorax somewhat lighter; mesepimerite apophyses rather long, apical half light, without spiral markings.

Male abdomen. Aedeagus (Fig. 112): median lobe with hairy apical spine and dorsal subapical spine pointing proximally, lying at left of elongate genital opening which has a beaded margin; parallel sclerites short; connecting membrane with about 15 teeth in single file; tegmen little sclerotised, basal piece five times as long as apical piece. Retracted segment (Fig. 115): tergum broad with hairy apex; sternum consisting of two bunches of about 15 dark spines each.



Figs 112–115. *A. (A.) robustissimus* Pic. 112: aedeagus. 113: last exposed abdominal sternum of male. 114: spiculum gastrale of male. 115: retracted abdominal segment of male.

Spiculum gastrale (Fig. 114) Y-shaped with broad apex. Last exposed sternum (Fig. 113) slightly indented at apex.

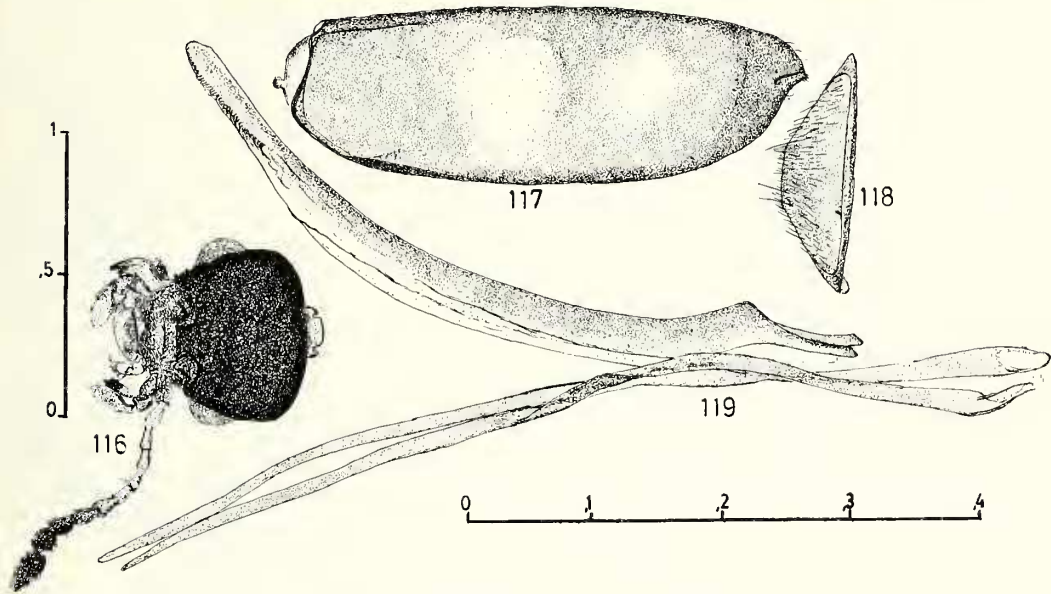
MATERIAL EXAMINED. Rhodesia (now Zimbabwe): Salisbury (now Harare), no date, Type ♀, Pic det., (no collector) (NMW); near Fort Victoria, ix.1931, 1 ♂, det. Heberdey, (Miss A. Mackie) (NMW).

In addition to these specimens the author found in material, on loan from the museum in Vienna, two more specimens named *A. (A.) robustissimus* Pic: 1) from South Africa, P. Bonae Spei, Zulus (*sic*), coll. Fry, 1 ♂, Pic det. This specimen is *A. (A.) bicoloritarsis* Pic (1948), described from South Africa, Plettenberg Bay [3423AB]. This is a coastal species occurring along the whole South African coast line. 2) South Africa, Wonderboom [2528CA], x.1931, coll. T. D. A. Cockerell: 1 ♂, det. Heberdey. This specimen is *A. (A.) magaliensis* spec. nov., described from Pretoria.

These two misidentifications may cast doubt on the correctness of the identification of the first two specimens. The author has considered the following points: 1) The ♀ specimen was collected at the type locality and was named by Pic, the author. It was collected some time before the date of description which makes it probable that it was indeed part of the type material. The ♂ specimen was collected about 270 km south of the type locality. It is bigger than than the ♀ type (2,02 mm against 1,75 mm) but its size agrees better with 2 mm as given by Pic in the description. The two specimens agree well in features not influenced by sex difference, like shape of head and prothorax, colour and distribution of punctures and hairs.

Pic (1948) described two variations of *A. (A.) robustissimus*, var. *convexipennis* and var. *pallidior*, from the coast of the eastern Cape Province, South Africa. The material was collected by the author. Both variations are *A. (A.) rotundipennis* Pic (1895a). This species is variable in colour and has a strictly coastal distribution, whereas *A. (A.) robustissimus* is an inland species.

In the same paper (Pic, 1948) a new species is described: *A. (A.) subrotundipennis* Pic which is said to resemble *A. (A.) robustissimus* var. *pallidior* Pic. The material was collected by the author along the coast of the eastern Cape Province and is also *A. (A.) rotundipennis* Pic (1985a). It is indeed difficult to identify these species on external features only.



Figs 116–119. A. (*A.*) *vansoni* spec. nov. 116: head 117: elytron of male. 118: last exposed abdominal sternum of male. 119: median lobe of aedeagus with parallel sclerites.

Anthicus (Aulacoderus) vansoni spec. nov., Figs 116–119

Size. Length 3,0 mm (2,50–3,20); width over broadest part of elytra 1,14 mm (1,00–1,28).

Head (Fig. 116). Somewhat glossy, black; posterior arch broadly transverse, converging to eyes. Punctures fine with short light procumbent hairs. Eyes bulging.

Prothorax. Somewhat glossy, black. Shoulders round. Broader than long, as broad as head. Punctures fine with fine recumbent hairs. Lateral constrictions inconspicuous with short light hairs. With two pairs of erect lateral hairs, anterior pair on shoulders, posterior pair half-way between shoulders and base.

Elytra (Fig. 117). Somewhat glossy, black with two pairs of light maculae, anterior pair reaching lateral margins but not median suture, posterior pair smaller and round. Hairs close and recumbent, those on anterior maculae finer and lighter; with a number of short erect hairs, especially along lateral margins and on posterior quarter.

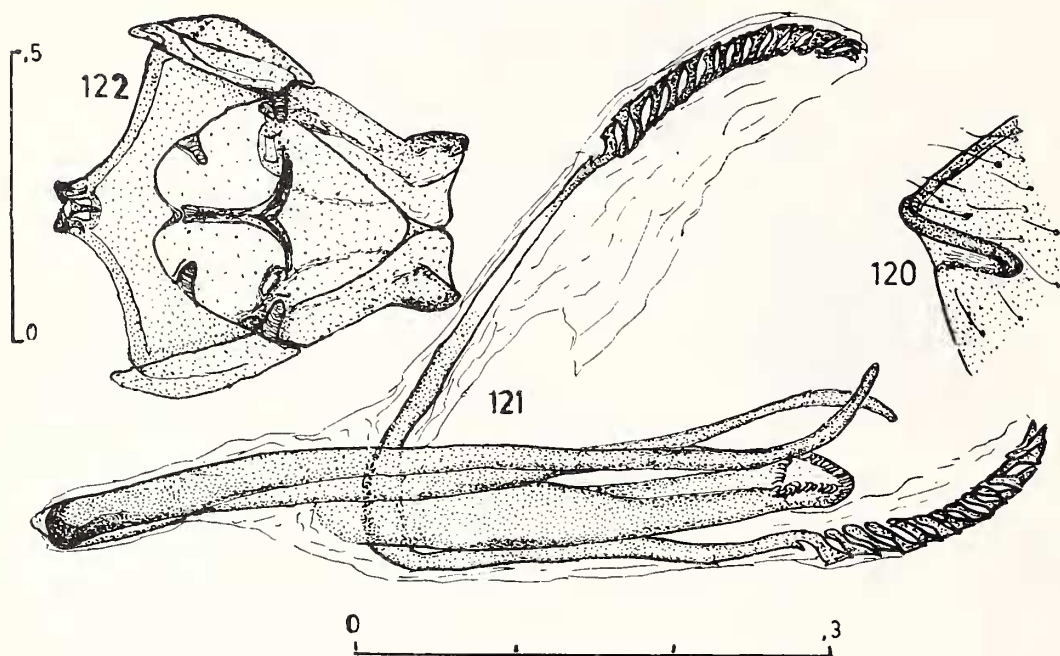
Wings. Fully developed.

Antennae (Fig. 116). Dark testaceous, 3–4 apical segments broader; last segment as long as two preceding ones together.

Legs. Dark testaceous, femora almost black.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus: median lobe (Fig. 119) dorsally convex, simple in shape with elongate genital opening with beaded margin; parallel sclerites longer than median lobe; connecting membrane with about 17 teeth of which the apical three are single, the others with small lateral sclerotisations which do not form denticles; tegmen: basal piece longer than apical piece which ends in a pair of blunt points. Retracted segment: tergum semi-circular, apical region hairy and very dark with transverse dark line; proximal region lighter with transverse row of fenestrae in the middle; sternum consisting of a pair of small plates with some apical hairs. Last exposed sternum (Fig. 118) with flat apex.



Figs 120-122. A. (*A.*) *apterus* van Hille. 120: apex of elytron of male. 121: median lobe of aedeagus with connecting membrane and parallel sclerites. 122: meso- and metathoracic sterna.

MATERIAL EXAMINED. South Africa: Pretoria North [2528CA], 3.ix.1932, Holotype ♂, (G. van Son) (AMSA); Rustenburg [2527CA], 3.xii.1953, Paratypes 2 ♂♂, (A. L. Capener) (AMSA).

Anthicus (Aulacoderus) apterus van Hille, Figs 120-122

Anthicus (Aulacoderus) apterus van Hille, 1961: 243

Size. Length 2,55 mm (2,50-2,60); width over broadest part of elytra 0,68 mm (0,63-0,73).

Head. Glossy, dark testaceous to black; posterior arch broadly oval, almost round. Punctures fine with fine procumbent hairs. Eyes small, not bulging.

Prothorax. Glossy, testaceous; longer than broad, narrower than head. Shoulders sloping and round. Punctures very fine with short recumbent hairs. Lateral constrictions shallow, with few long hairs.

Elytra. Glossy, testaceous; convex, without shoulders. Punctures fine with short recumbent hairs. In male with small apical point and well developed notch with thick lateral margin (Fig. 120).

Wings. Absent; metatergum much reduced in both sexes.

Antennae. Testaceous, apical five segments gradually slightly darker and slightly broader; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous; in addition to the mesepimerite apophyses a similar pair of apophyses on front margin of metasternum, pointing forwards and lying dorsal to mesocoxal cavities (Fig. 122); metepisternum immovably fused onto metasternum, a feature not seen in other species of *Aulacoderus*.

Male abdomen. Aedeagus (Fig. 121): median lobe short with short triangular genital opening with beaded margin; parallel sclerites more than $1\frac{1}{2}$ times as long as median lobe; connecting membrane with two dorsal rows of about 12–14 teeth each; tegmen: basal piece longer than apical piece. Spiculum gastrale with asymmetrical Y-arms, one shorter than other. Retracted segment: tergum with flat apex and transverse row of fenestrae near base; sternum consisting of pair of thin elongate plates with narrow base and broad apex with row of hairs. Last exposed sternum with round apex.

MATERIAL EXAMINED. South Africa: Kirstenbosch [3318CD], 29.x.1950. Holotype ♂, Paratype ♀, (Brink and Rudebeck) (UEML); Cape Point Nature Reserve [3418AD], 24.x.1950 and 10.xii.1950, Paratypes 2 ♀♀, (Brink and Rudebeck) (UEML); Houtbay, Schoorsteen Kop [3418AB], 9.xii.1950, Paratype ♀, (Brink and Rudebeck) (UEML); Newlands Cape, Rhodes Drive [3318CD], to meloid bait, 19.xi.1979, 2 ♂♂, (J. C. van Hille) (AMSA); Newlands Cape, Forest Reserve [3318CD], to meloid bait, 21.xi.1979, 1 ♂, (J. C. van Hille) (AMSA); Cape Point Nature Reserve, Buffels Bay [3418AD], to meloid bait, 23.xi.1979, 2 ♂♂, (J. C. var Hille) (AMSA).

Anthicus (Aulacoderus) ranchhodi spec. nov., Figs 123–127

Size. Length 2,75 mm; width over broadest part of elytra 0,75 mm.

Head (Fig. 124). Glossy, black; posterior arch broad, outline of head narrowing by an almost straight line to mouthparts. Punctures distinct with dark procumbent hairs. Eyes bulging.

Prothorax (Fig. 124). Glossy, black; broader than long, broader than head; shoulders sloping to lateral angular points; with three pairs of erect lateral hairs: 1st pair between neck and shoulder angle, 2nd pair on shoulder angle, 3rd pair between shoulder and lateral constriction. Punctures as on head, with dark recumbent hairs. Lateral constrictions at $\frac{5}{7}$ of length of prothorax, with fine long hairs.

Elytra (Fig. 123). Elongate, glossy, black, with a pair of transverse light maculae in middle, extending more forwards than backwards, reaching neither lateral margins nor median suture. Punctures distinct with dark recumbent hairs but on maculae the hairs are light and point obliquely to lateral margin over greater part of surface.

Wings. Fully developed.

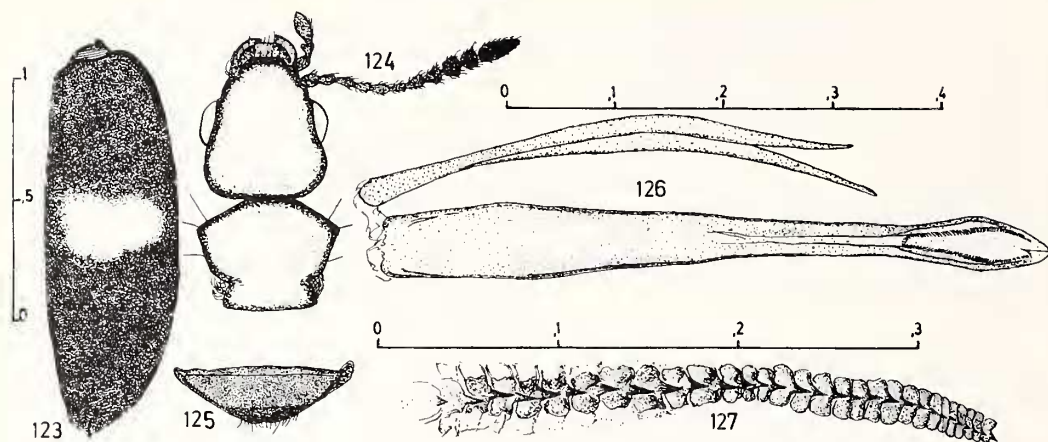
Antennae (Fig. 124). Dark testaceous to black; apical 3–4 segments broader; last segment slightly longer than two preceding ones together.

Legs. Dark testaceous; coxae and femora black.

Undersurface. Black.

Male abdomen. Aedeagus: median lobe (Fig. 126) slender, with elongate apical genital opening with finely grooved margin; parallel sclerites slender and pointed, shorter than median lobe; connecting membrane (Fig. 127) with dorsal row of about 30 small teeth, each standing on a separate pigmented plate; tegmen with basal piece about three times as long as apical piece. Retracted segment: tergum with dark hairy apical part and subapical dark transverse line and basal dark transverse line; in between a row of fenestrae which is single in middle but multiple at sides; sternum consisting of elongate pigmented sclerites, each with two spiny hairs. Last exposed sternum (Fig. 125) with small apical indentation.

MATERIAL EXAMINED. South Africa: Mogoto [2429AC], to meloid bait, 24.x.1979, Holotype ♂, (M. W. Mansell) (AMSA).



Figs 123–127. *A. (A.) ranchodi* spec. nov. 123: clytron of male. 124: head and prothorax. 125: last exposed abdominal sternum of male. 126: median lobe of aedeagus with parallel sclerites. 127: row of teeth of connecting membrane of aedeagus.

Anthicus (Aulacoderus) pustulatus spec. nov., Figs 128–130

Size. Length 2,30 mm; width over broadest part of elytra 0,90 mm.

Head. Glossy, dark testaceous to black; posterior arch broad and transverse, rounded to eyes. Punctures close with fine short procumbent hairs.

Prothorax. Glossy, dark testaceous; broader than long. broader than head. Punctures as on head with short recumbent hairs and three pairs of long erect lateral hairs. Lateral constrictions at $\frac{2}{5}$ of length of prothorax with fine long hairs.

Elytra. Glossy, dark testaceous; rather short and broad. Punctures more widely spaced than on prothorax, with fine recumbent hairs and some erect hairs, hardly longer than recumbent hairs.

Wings. Fully developed.

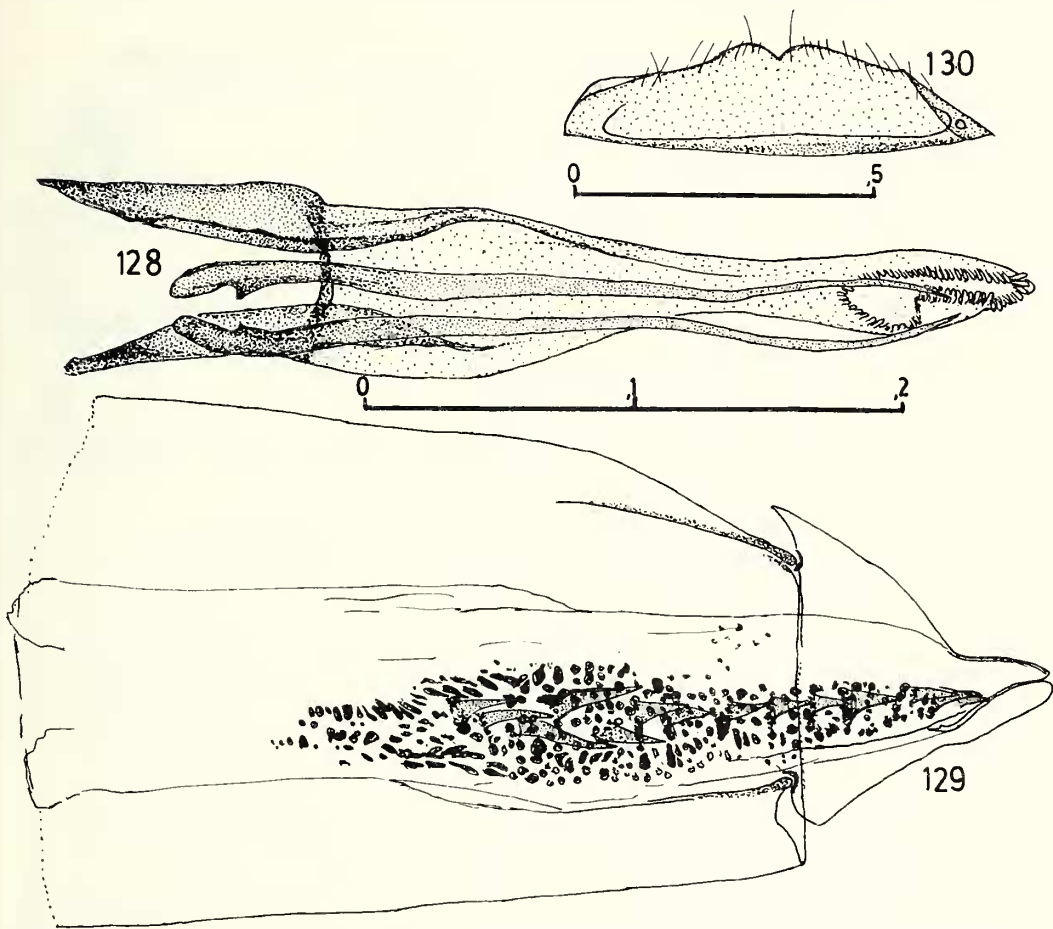
Antennae. Dark testaceous; apical four segments broader; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus: median lobe (Fig. 128) slender, with large apical genital opening with beaded margin; parallel sclerites slender and pointed, not much shorter than median lobe; connecting membrane (Fig. 129) with about 14 large pointed dorsal teeth, not strictly arranged in a longitudinal row and surrounded by an elaborate array of dark pustules; tegmen: basal piece three times as long as apical piece which ends in a pair of blunt lobes. Retracted segment: tergum semi-circular with proximal row of fenestrae; sternum consisting of pair of narrow short plates. Last exposed sternum (Fig. 130) short and broad with short sharp apical indentation.

MATERIAL EXAMINED. South Africa: Estcourt, Kimbolton [2929BB], 23.x.1892, Holotype ♂, (G. A. K. Marshall) (BMNH).



Figs 128–130. *A. (A.) pustulatus* spec. nov. 128: median lobe of aedeagus with parallel sclerites. 129: tegmen and connecting membrane of aedeagus with teeth and pustules. 130: last exposed abdominal sternum of male.

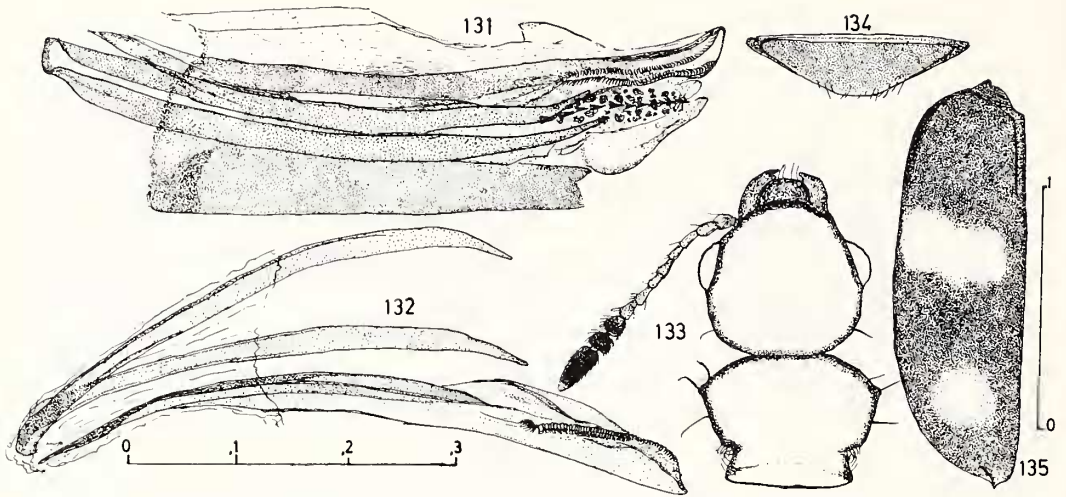
Anthicus (Aulacoderus) forsythi spec. nov., Figs 131–135

Size. Length 2,56 mm (2,42–2,72); width over broadest part of elytra 0,91 mm (0,75–0,98).

Head (Fig. 133). Glossy, black; posterior arch very broad with pair of lateral erect hairs half-way between eyes and neck. Punctures fine and close with procumbent hairs. Eyes bulging.

Prothorax (Fig. 133). Glossy, black; broader than long, as broad as head. Shoulders sloping and angular; with three pairs of long erect lateral hairs. Punctures close with short recumbent hairs. Lateral constrictions at $\frac{2}{3}$ of length of prothorax, with long fine whitish hairs; a transverse dorsal shallow depression connects the lateral constrictions.

Elytra (Fig. 135). Elongate, glossy, black with two pairs of testaceous maculae; anterior



Figs 131–135. *A. (A.) forsythi* spec. nov. 131: aedeagus. 132: median lobe of aedeagus with parallel sclerites. 133: head and prothorax. 134: last exposed abdominal sternum of male. 135: elytron of male.

pair in front of middle, somewhat rectangular, not reaching median suture; posterior pair subapical and roughly round. Punctures distinct with dark recumbent hairs, but on anterior maculae hairs are silvery and on median half of macula hairs are not recumbent but point outwards and backwards with an angle of 45° with longitudinal axis; with a number of semi-erect hairs implanted in transparent punctures. In male with small apical point and oblique notch.

Wings. Fully developed.

Antennae (Fig. 133). Testaceous to dark testaceous, apical 3–5 segments darker, apical 3–4 segments broader; last segment longer than two preceding ones together.

Legs. Testaceous; coxae and femora dark testaceous to black.

Undersurface. Black.

Male abdomen. Aedeagus (Fig. 131): median lobe (Fig. 132) slender with elongate genital opening with distinctly grooved margin; parallel sclerites pointed, shorter than median lobe; connecting membrane with dorsal row of about 12 dark small pointed teeth, surrounded by dark pustules of irregular shape; tegmen: basal piece three times as long as apical piece. Retracted segment: tergum broad with two transverse dark lines, one subapical, the other at base; between these lines are many fenestrae arranged in a somewhat irregular double row; sternum consisting of a pair of dark elongate sclerites with strongly sclerotised proximal margin and each with two spiny hairs. Last exposed sternum (Fig. 134) with flat apex without indentation.

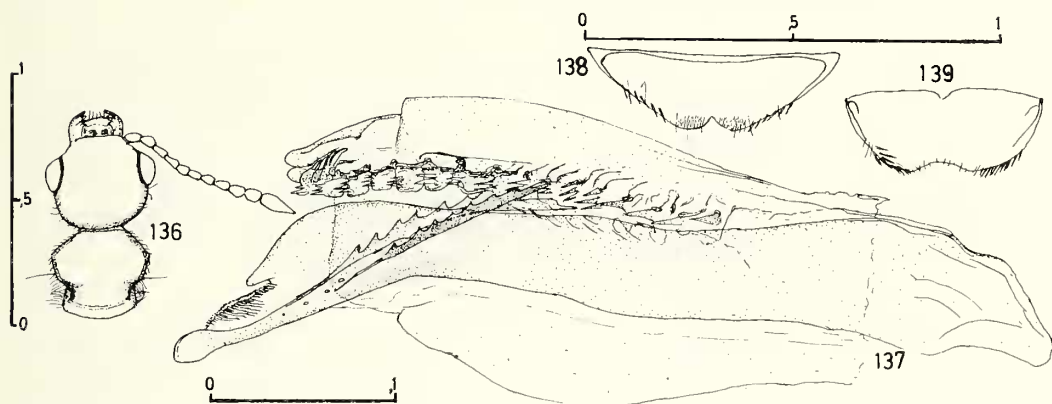
MATERIAL EXAMINED. South Africa: Mogoto [2429AC], to meloid bait, 24.x.1979, Holotype δ , Paratypes 6 δ δ , (M. W. Mansell) (AMSA).

Anthicus (Aulacoderus) humicola spec. nov., Figs 136–139

Size. Length 2 mm; width over broadest part of elytra 0,85 mm.

Head (Fig. 136). Glossy, testaceous; posterior arch broadly round. Punctures distinct with procumbent hairs. Eyes with dark margin, bulging.

Prothorax (Fig. 136). Glossy, testaceous; broader than long, narrower than head. Shoul-



Figs 136–139. *A. (A.) humicola* spec. nov. 136: head and prothorax. 137: aedeagus. 138: last exposed abdominal sternum of male. 139: last exposed abdominal tergum of male.

ders sloping and angular and with a pair of obtuse lateral angles shortly anterior to lateral constrictions which are at $\frac{2}{3}$ of length of prothorax, with long hairs and connected by a fine transverse dorsal groove.

Elytra. Glossy, testaceous; shoulders round; rather short, broadest at anterior third. Punctures fine with recumbent hairs, longer than on prothorax.

Wings. Fully developed.

Antennae (Fig. 136) Light testaceous, apical segments slightly broader but not darker; last segment slightly longer than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen slightly darker than thorax.

Male abdomen. Aedeagus (Fig. 137): median lobe with blunt apex, subapical genital opening with beaded margin and broad blunt dorsal spine immediately proximal to genital opening; parallel sclerites narrow with dorsal saw-like edge with 6–7 teeth; connecting membrane with dorsal rows of about 20 teeth of which the middle ones occur in transverse rows of three; tegmen lightly sclerotized with basal piece four times as long as apical piece which ends in two blunt lobes. Retracted segment: tergum with narrow dark apical area with central group of hairs diverging backwards and outwards; with broad transverse dark line and row of fenestrae in lighter proximal area; sternum consisting of a pair of narrow, almost linear, sclerites. Last exposed tergum (Fig. 139) with short shallow apical indentation and about 10 short spine-like hairs on each side. Last exposed sternum (Fig. 138) with sharp apical indentation with about 6 spiny marginal hairs on each side.

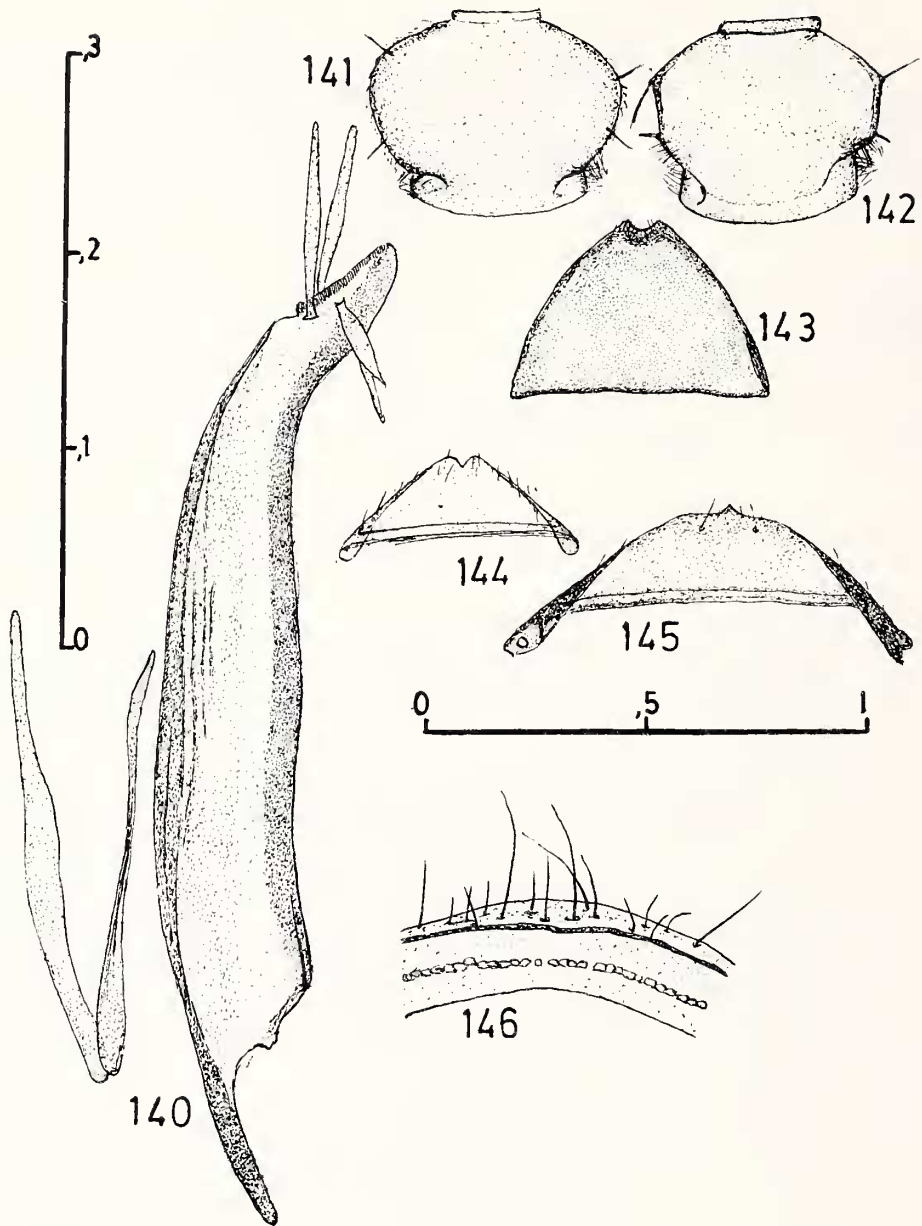
MATERIAL EXAMINED. Congo (now Zaire): Kivu, Terr. Fizi, Itomwe nord 900 m, récolté dans l'humus iv.1951, Holotype ♂, (N. Leleup) (MRAC).

The attachment of the saw-edge sclerites to the connecting membrane is not visible; the author has assumed that these structures are homologous with parallel sclerites.

Anthicus (Aulacoderus) quietus spec. nov., Figs 140–146

Size. Length males 1,88 mm (1,72–2,03), females 2,25 mm (2,13–2,34); width over broadest part of elytra males 0,68 mm (0,66–0,70), females, 0,99 mm (0,96–1,00).

Head. Glossy, dark testaceous in male, in female somewhat lighter; posterior arch broadly



Figs 140-146. A. (*A.*) *quietus* spec. nov. 140: median lobe of aedeagus with parallel sclerites. 141: prothorax of male. 142: prothorax of female. 143: last exposed abdominal tergum of female. 144: last exposed abdominal sternum of male. 145: last exposed abdominal sternum of female. 146: detail of tergum of retracted segment of male.

round. Hairs short and procumbent and a few erect hairs on posterior lateral margin. Eyes slightly bulging.

Prothorax. Glossy, testaceous, lighter than head; broader than long, broader than head; in male with round shoulders (Fig. 141), in female with two pairs of lateral angles, each angle with an erect hair (Fig. 142); male has erect hairs in corresponding positions. Punctures close with recumbent hairs but scarce on posterior area, especially in female. Lateral constrictions deep with long hairs, connected by basal transverse dorsal depression.

Elytra. Glossy, testaceous with dark transverse band behind middle; median basal corner and apical area also slightly darker. Punctures more widely spaced than on prothorax, with recumbent hairs; on the lighter parts of the elytra the hairs are finer, lighter and shorter than on dark parts.

Wings. Fully developed.

Antennae. Testaceous, apical 3–4 segments darker and broader; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous with sparse fine recumbent hairs.

Male abdomen. Aedeagus: median lobe (Fig. 140) short and broad, with two pairs of spines around genital opening which has a beaded margin; parallel sclerites slender and simple, less than half the length of median lobe; connecting membrane with about 22 single teeth; tegmen: basal piece five and a half times as long as apical piece which ends in two round points. Retracted segment: tergum lightly sclerotised and hardly pigmented but with dark transverse line and more proximal transverse row of fenestrae (Fig. 146); sternum consisting of a pair of thin slender plates. Last exposed sternum (Fig. 144) with short apical indentation.

Female abdomen. Last exposed tergum (Fig. 143) with short round apical indentation. Last exposed sternum (Fig. 145) with small apical point.

MATERIAL EXAMINED. South Africa: Rustenburg [2527CA], 4–7.xii.1951, Holotype ♂, Paratypes 1 ♂, 3 ♀ ♀, (A. L. Capener) (AMSA); Nylsvlei near Nylstroom [2428CB], to light, xii.1979, Paratype ♂, (C. Eardley) (AMSA).

Anthicus (Aulacoderus) pondo spec. nov., Figs 147–150.

Size. Length 2,93 mm; width over broadest part of elytra 1,13 mm.

Head. (Fig. 150). Somewhat glossy, black, posterior arch broad. Punctures fine, rather close, with black procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 150). Somewhat glossy, black, lighter at base; broader than long, as broad as head. Shoulders sloping and angular and with another pair of lateral angles in front of lateral constrictions. Punctures close with short black recumbent hairs but posterior area less closely punctured and with longer hairs. Lateral constrictions deep, at $\frac{3}{4}$ of length of prothorax, with fine long hairs.

Elytra (Fig. 149). Glossy, dark testaceous to black with two pairs of light maculae, anterior pair small and indistinct, posterior pair distinct and round, touching lateral margin. Punctures close with coarse black hairs but on maculae the hairs are finer and lighter.

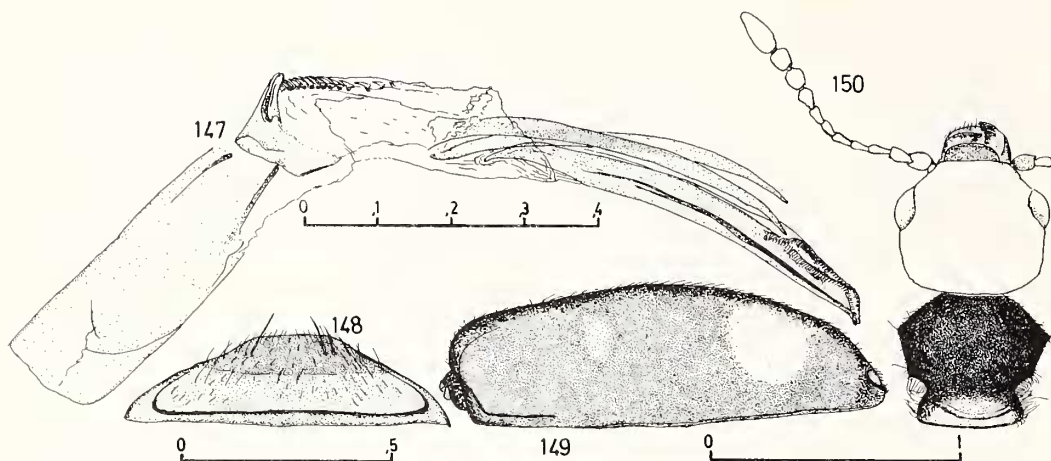
Wings. Fully developed.

Antennae (Fig. 150). Dark testaceous; first proximal and apical three segments darker and broader; apical segment as long as two preceding ones together.

Legs. Dark testaceous to black.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 147): median lobe slender with large apical genital opening with beaded margin; parallel sclerites simple and pointed, shorter than median lobe; connecting membrane with about 13 single teeth; tegmen: basal piece three and a half times as long as apical piece. Retracted segment: tergum semi-circular with transverse dark line and



Figs 147-150. A. (*A.*) *pondo* spec. nov. 147: aedeagus. 148: last exposed abdominal sternum of male. 149: elytron of male. 150: head and prothorax.

parallel row of fenestrae; sternum consisting of a pair of slender triangular plates. Last exposed sternum (Fig. 148) apically flat with a few long hairs on each side.

MATERIAL EXAMINED. South Africa: Pondoland, Port St Johns [3128DA], 3-15.iv.1924, Holotype ♂, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) marginatus spec. nov., Figs 151-154.

Size. Length 2,60 mm; width over broadest part of elytra 0,95 mm.

Head. Glossy, black; posterior arch broad with round angles, slightly diverging to eyes. Punctures rather fine with dark procumbent hairs. Eyes rather small and bulging.

Prothorax. Glossy, dark testaceous to black; broader than long, broader than head. Shoulders round. Lateral constrictions at $\frac{5}{7}$ of length of prothorax. Punctures finer and more widely spaced than on head, with dark recumbent hairs.

Elytra (Fig. 153). Somewhat glossy, light testaceous with dark margin varying in breadth, making central light area narrower behind middle. Punctures fine with recumbent hairs which are dark on dark margin and also on a transverse band where central light area is narrowest; on the rest of central light area the hairs are colourless.

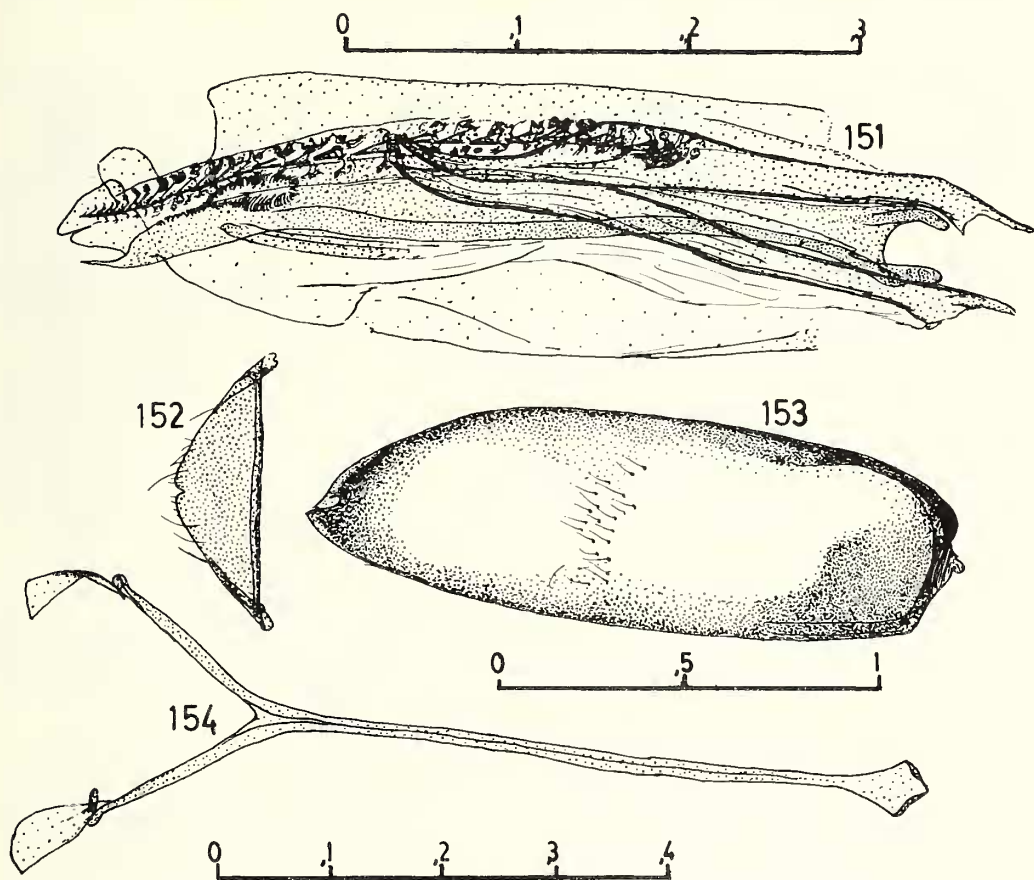
Wings. Fully developed.

Antennae. Testaceous with proximal first and apical four segments darker and broader; last segment as long as two preceding ones together.

Legs. Testaceous, coxae and femora much darker, almost black.

Undersurface. Thorax testaceous to dark testaceous; abdomen dark testaceous to black.

Male abdomen. Aedeagus (Fig. 151): median lobe slender with small apical point and wide subapical genital opening; parallel sclerites apically pointed, about $\frac{3}{4}$ of length of median lobe; connecting membrane with about 28 teeth; tegmen little sclerotised, basal piece twice as long as apical piece which has two blunt apical points. Retracted segment: tergum with flat apex, dark apical area with transverse dark line and parallel more proximal row of fenestrae; sternum consisting of a pair of short narrow sclerites. Spiculum gastrale (Fig. 154) Y-shaped with pair of small apical extra-spicular sclerites. Last exposed sternum with small sharp indentation (Fig. 152).



Figs 151-154. *A. (A.) marginatus* spec. nov. 151: aedeagus. 152: last exposed abdominal sternum of male. 153: elytron of male. 154: spiculum gastrale with extraspicular sclerites of male.

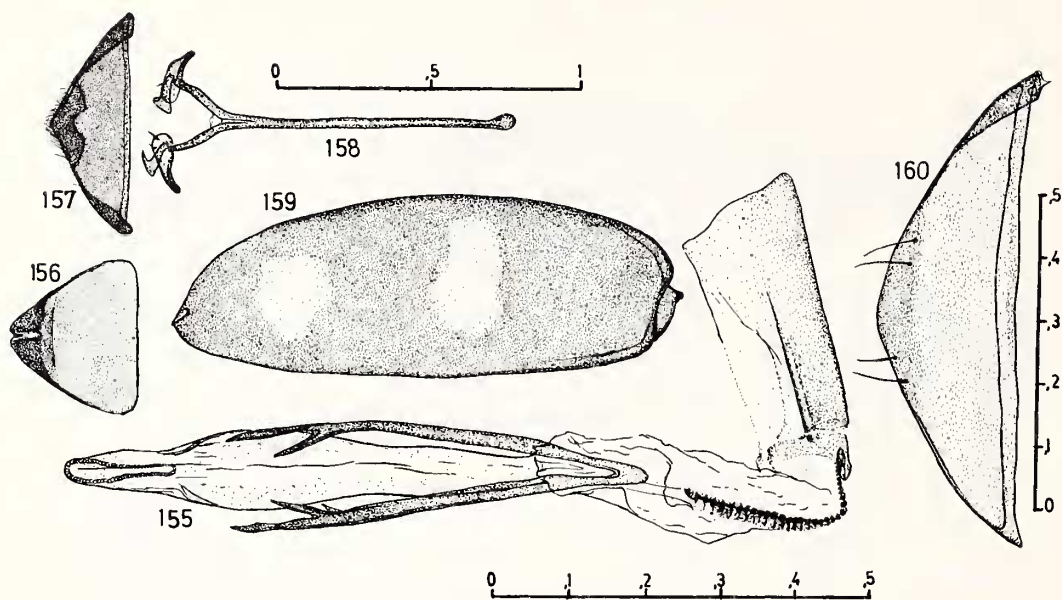
MATERIAL EXAMINED. South Africa: Pretoria, Fountains [2528CC], 20.ii.1952, Holotype ♂, (A. L. Capener) (AMSA); Pretoria [2528CA], light trap, 18.ii.1957, Paratype ♂, (Entomologist) (AMSA).

Anthicus (Aulacoderus) rustenburgensis spec. nov., Figs 155-160

Size. Length 2,74 mm (2,44-3,16); width over broadest part of elytra 1,13 mm (0,94-1,20).

Head. Glossy, black; posterior arch almost straight and transverse, with round angles to eyes. Punctures dense with short procumbent hairs. Eyes somewhat bulging.

Prothorax. Somewhat glossy, black but lighter at posterior margin; broader than long, broader than head. Shoulders sloping and angular. Lateral constrictions at $\frac{2}{3}$ of length of prothorax, with long hairs. Punctures dense with short recumbent hairs.



Figs 155–160. *A. (A.) rustenburgensis* spec. nov. 155: aedeagus. 156: last exposed abdominal tergum of female. 157: last exposed abdominal sternum of female. 158: spiculum gastrale with extra-spicular sclerites and sternum of retracted abdominal segment of male. 159: elytron of male. 160: last exposed abdominal sternum of male.

Elytra. (Fig. 159). Glossy, black with two pairs of light maculae. Punctures with dark recumbent hairs but on anterior maculae hairs are finer lighter and shorter; some erect hairs along lateral margins and on posterior region.

Wings. Fully developed.

Antennae. Testaceous, proximal first and apical 3–4 segments darker and broader; last segment longer than two preceding ones together.

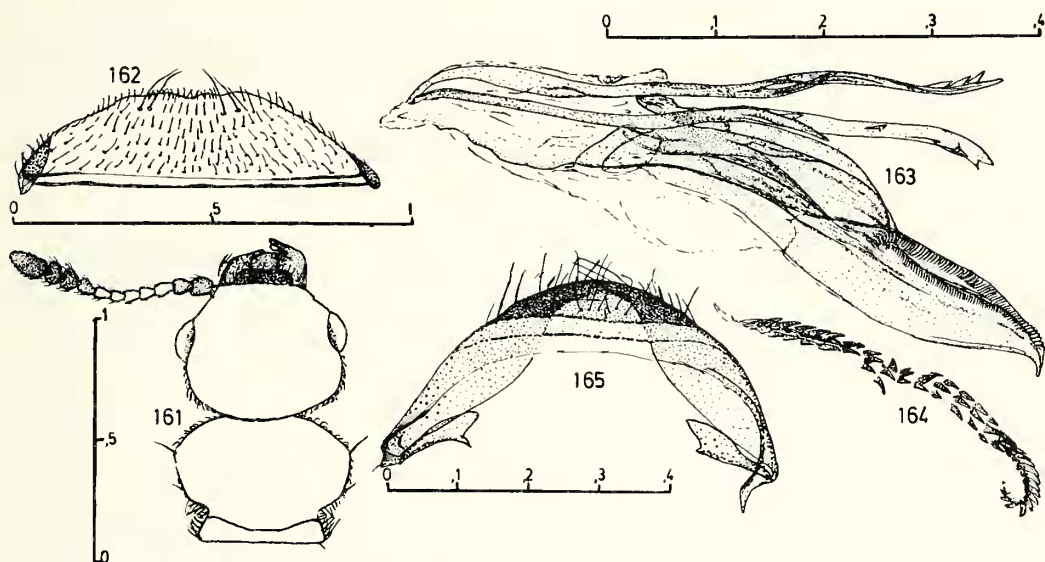
Legs. Testaceous, coxae and femora darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 155): Median lobe with apical elongate genital opening; parallel sclerites fused at base, with two or three apical points each; connecting membrane with about 32 single teeth; tegmen: basal piece five times as long as apical piece. Retracted segment: tergum with dark apical part with darker basal line and more proximal row of fenestrae; sternum consisting of a pair of narrow sclerites, each with two apical hairs (Fig. 158). Spiculum gastrale (Fig. 158) with small curved extra-spicular sclerite at end of each Y-arm. Last exposed sternum (Fig. 160) with bluntly pointed apex.

Female abdomen. Last exposed tergum (Fig. 156) with apical indentation and short median groove. Last exposed sternum (Fig. 157) with apical margin folded inwards, apically pointed.

MATERIAL EXAMINED. South Africa: Rustenburg [2527CA], xi.1952, Holotype ♂, Paratypes 14 ♀♀, (A. L. Capener) (AMSA).



Figs. 161–165. *A. (A.) gessi* spec. nov. 161: head and prothorax. 162: last exposed abdominal sternum of male. 163: median lobe and parallel sclerites of aedeagus. 164: dorsal row of teeth of connecting membrane of aedeagus. 165: retracted abdominal segment of male.

Anthicus (Aulacoderus) gessi spec. nov., Figs 161–165

Size. Length 2,69 mm (2,57–2,82); width over broadest part of elytra 1,03 mm (0,97–1,10).

Head (Fig. 161). Glossy, black; posterior arch broadly round with short hairs. Punctures rather dense with short grey procumbent hairs. Eyes rather small, only slightly bulging.

Prothorax (Fig. 161). Glossy, black; broader than long, slightly broader than head. Shoulders somewhat angular, each with an erect lateral hair. Punctures as on head with short recumbent hairs. Lateral constrictions at $\frac{1}{3}$ of length of prothorax, connected by transverse dorsal groove with long hairs. Basal area testaceous with fine light procumbent hairs.

Elytra. Somewhat glossy, black with pair of testaceous maculae in middle, extending further backwards than forwards. Punctures rather close with fine grey recumbent hairs, longer than on prothorax; with a few semi-erect hairs on shoulder area.

Wings. Fully developed.

Antennae (Fig. 161). Dark testaceous, rather short; apical 3–4 segments broader and slightly darker; last segment slightly longer than two preceding ones together.

Legs. Testaceous, femora and last tarsal segment darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus: median lobe (Fig. 163) laterally flattened with elongate apical genital opening with beaded margin; parallel sclerites slender, shorter than median lobe, each with about four short hooks and a long forked hook between $\frac{1}{2}$ and $\frac{1}{3}$ of the length of the parallel sclerite; connecting membrane with row of about 30 teeth (Fig. 164) which occur in transverse rows of three near attachment to base of median lobe but in single file near attachment to tegmen; tegmen: basal piece about five times as long as apical piece which ends in two blunt

points. Retracted segment (Fig. 165): tergum rather broad, apically dark, with transverse line and more proximal transverse row of fenestrae; sternum consisting of pair of short sclerites. Last exposed sternum (Fig. 162) with apical margin slightly undulated in median area and with two long hairs on each side.

MATERIAL EXAMINED. South Africa: Natal, Drakensberg, Van Reenen 5 500–6 500 m [2829AD], x–xi.1926, Holotype ♂. Paratypes 4 ♂♂, (R. E. Turner) (BMNH).

SECTION 6

The species of this section, in contrast with those of sections 7 and 8, have no ventral spine on the apical region of the median lobe of the aedeagus. The species of this section are distributed over the whole of Africa and only one species has a strictly coastal distribution.

Key to the species of Section 6

- 1 Sternum of retracted abdominal segment of male consisting of a single complicated structure with two sets of spines on each side (Fig. 167) *perfuscus*
- Sternum of retracted abdominal segment of male consisting of paired structures 2
- 2 Male genital opening about as long as half the length of median lobe of aedeagus 3
- Male genital opening shorter than half the length of median lobe of aedeagus 4
- 3 Male genital opening with more than 20 spines on each side (Fig. 170) *mutatus*
- Male genital opening not surrounded by spines (Fig. 174); tergum of retracted segment of male with two patches of dark hairs (Fig. 173) *bedfordi*
- 4 Elytra of male with dark apical spine 5
- Elytra of male without dark apical spine 6
- 5 Apical elytral spine of male small and blunt (Fig. 178) *munroi*
- Apical elytral spine of male large and pointed and opposed by an elytral lobe with a number of spiny hairs (Fig. 184) *convexus*
- 6 Sternum of retracted abdominal segment of male with a bundle of black inwards pointing bars (Fig. 191) *mediofasciatus*
- Sternum of retracted abdominal segment of male without black bars 7
- 7 Connecting membrane of aedeagus with two rows of seven teeth each; median lobe of aedeagus ending in a pair of points, otherwise not sclerotised (Fig. 197) *schimperi*
- Connecting membrane of aedeagus with one row of teeth although teeth may occur in transverse rows of 3–5 8
- 8 Elytra black with a pair of light maculae on posterior half (Fig. 200); median lobe of aedeagus very slender and long (Fig. 198); connecting membrane with about 35 teeth *morani*
- Elytra not black with a pair of posterior maculae 9
- 9 Teeth of connecting membrane of aedeagus in single file; elytra light testaceous to testaceous with or without dark markings 10
- Teeth of connecting membrane of aedeagus in transverse rows of 3–5 13
- 10 Sternite of retracted segment of male with apical spines 11
- Sternite of retracted segment of male without apical spines 12
- 11 Median lobe of aedeagus with long spine distal to genital opening and a parallel dorsal spine attached proximally to genital opening, almost as long (Fig. 202) ... *chicarubiensis*
- Median lobe of aedeagus very slender with long spine, distal to genital opening and a very short dorsal spine attached proximally to genital opening (Fig. 207) *stephani*
- 12 Connecting membrane of aedeagus with about 11 teeth (Fig. 213) *nemoralis*
- Connecting membrane of aedeagus with about 28 teeth (Fig. 214) *minimus*

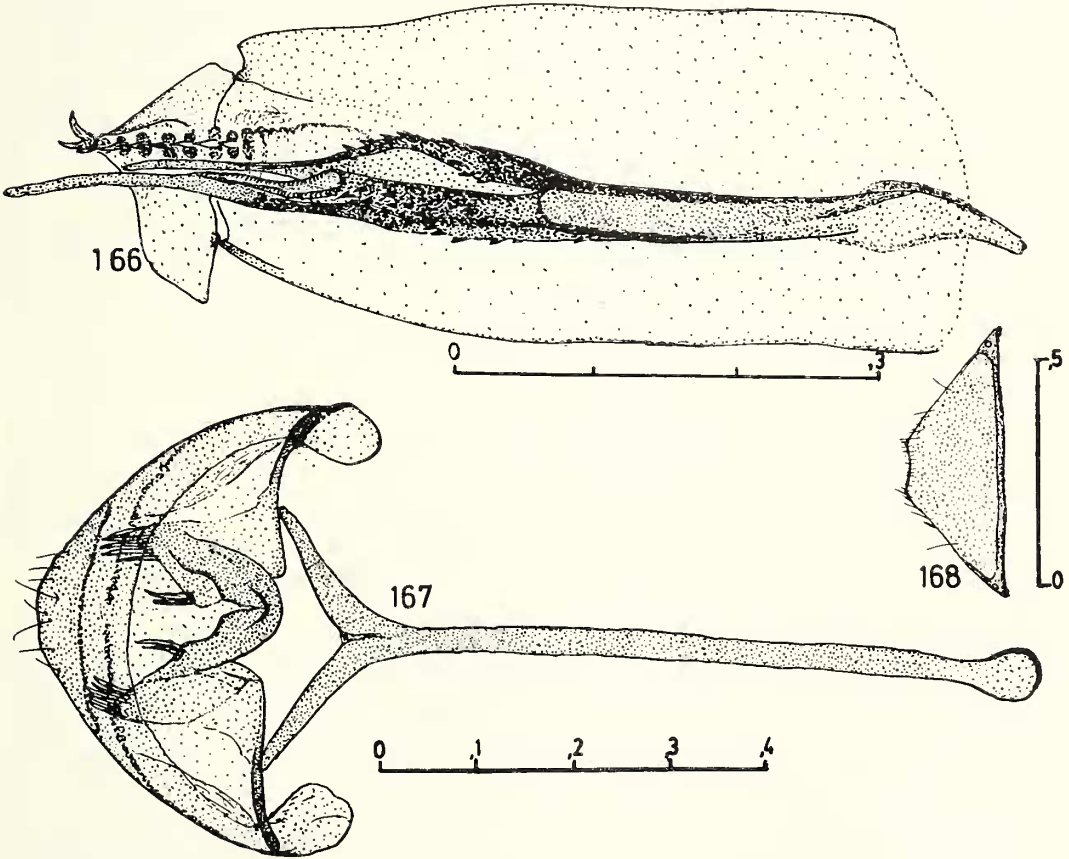
AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

- 13 Elytra light testaceous or testaceous with dark transverse bands; genital opening without beaded margin (Fig. 219) *simoni* 14
 — Elytra dark testaceous, without pattern 14
 14 Median lobe of aedeagus short and broad (Fig. 223); teeth of connecting membrane short and broad *inopinans*
 — Median lobe of aedeagus long and slender; teeth of connecting membrane small and thin (Fig. 229) *termitophilus*

Anthicus (Aulacoderus) perfuscus spec. nov., Figs 166–168

Size. Length 2,23 mm (2,00–2,40); width over broadest part of elytra 0,83 mm (0,80–0,91).

Head. Glossy, dark testaceous to black; posterior arch broadly round. Punctures well spaced, with fine procumbent hairs; about six erect hairs on dorsal surface and a pair of lateral erect hairs between eyes and neck. Eyes bulging.



Figs 166–168. A. (*A.*) *perfuscus* spec. nov. 166: median lobe of aedeagus. 167: retracted abdominal segment and spiculum gastrale of male. 168: last exposed abdominal sternum of male.

Prothorax. Glossy, testaceous, slightly lighter than head, with lighter base; broader than long, slightly broader than head. Shoulders sloping and angular, with an erect lateral hair on each angle. Punctures closer than on head but absent on posterior area; hairs fine and recumbent. Lateral constrictions not prominent, with some longish hairs.

Elytra. Glossy, testaceous, lighter than prothorax; elongate with fine punctures and recumbent hairs and with about 36 erect or semi-erect hairs more than twice as long as the recumbent hairs, distributed over the whole surface.

Wings. Fully developed.

Antennae. Light testaceous, apical three segments darker and somewhat broader; last segment longer than two preceding ones together.

Maxillary palps. Darker than base of antennae.

Legs. Light testaceous, coxae and femora darker.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 166): median lobe with long apical point distal to genital opening and dorsal process facing genital opening; proximal to genital opening the lateral margins of median lobe have each a longitudinal row of about 12 short sharp distally pointing spines; connecting membrane with dorsal row of about 9 teeth each with a dark footplate resembling those of *A. (A.) ranchhodi* (Fig. 127); tegmen: apical piece dorsally pointed, basal piece five times as long as apical piece. Retracted segment (Fig. 167): tergum with transverse row of fenestrae, shortly interrupted in the middle and dark transverse line distal to row of fenestrae; sternum consisting of a single sclerite with two sets of spines on each side. Spiculum gastrale with short widely diverging Y-arms. Last exposed sternum (Fig. 168) with apical indentation.

MATERIAL EXAMINED. South Africa: Natal, Oqalweni (? = Oqaqeni [2931AA]), in humus, x.1960, Holotype ♂, Paratypes 3 ♂♂, (N. Leleup) (TMP); Natal, Bergville District, Induneni Forest, in humus, [2929AA], x.1960, Paratype 1 ♂, (N. Leleup) (TMP); Van Reenen [2829AD], xi.1926, Paratype ♂, (R. E. Turner) (BMNH).

The structure of the sternum of the retracted segment of male is unique.

Anthicus (Aulacoderus) mutatus Gemm., Figs 169–172

Anthicus (Aulacoderus) mutatus Gemminger, 1870: 123

Anthicus (Aulacoderus) transversalis La Ferté, 1848: 270

Size. Length 2.19 mm (1.74–2.52); width over broadest part of elytra 0.81 mm (0.66–0.90).

Head (Fig. 169). Somewhat glossy, testaceous to dark testaceous; posterior arch round. Punctures fine with fine whitish procumbent hairs and a pair of semi-erect lateral hairs between eyes and neck. Eyes bulging.

Prothorax (Fig. 169). Somewhat glossy, testaceous, often lighter than head; longer than broad, narrower than head. Shoulders round. Punctures fine with whitish hairs somewhat coarser than on head; a pair of lateral erect hairs on shoulders and a similar pair half-way between shoulders and lateral constrictions. Lateral constrictions at $\frac{3}{4}$ of length of prothorax.

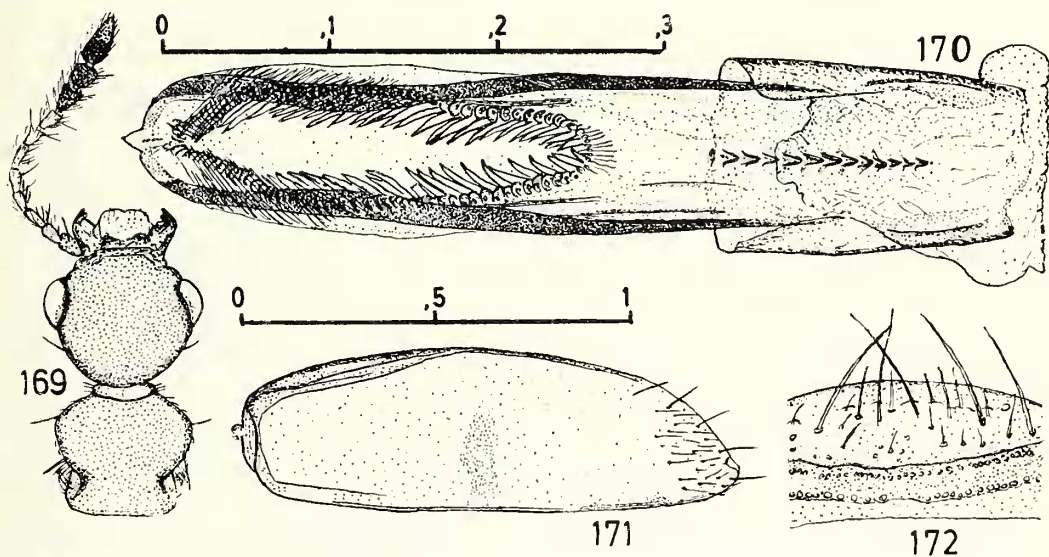
Elytra (Fig. 171). Slightly glossy, testaceous with transverse dark band in middle which usually does not reach lateral margins; a darker narrow elongate area at $\frac{3}{4}$ of length of elytra; with fine whitish recumbent hairs and a number of erect longer hairs.

Wings. Fully developed.

Antennae (Fig. 169). Testaceous, three apical segments broader and darker, almost black.

Legs. Testaceous.

Undersurface. Testaceous.



Figs 169–172. *A. (A.) mutatus* Gemm. 169: head and prothorax. 170: aedeagus. 171: clytron of male. 172: detail of tergum of retracted segment of male.

Male abdomen. Aedeagus: median lobe (Fig. 170) with large genital opening with beaded margin and surrounded by two rows of spines which become thinner toward apex; connecting membrane with dorsal row of about 12 small teeth; tegmen lightly sclerotized, basal piece longer than apical piece. Retracted segment: tergum (Fig. 172) with double row of fenestrae, those of apical row smaller than those of proximal row; sternum consisting of a pair of hardly sclerotized plates. Last exposed sternum with flat apex.

Identified from a drawing by Mr P. Bonadona of aedeagus of a type (private communication).

MATERIAL EXAMINED. South Africa: Onrus [3419AC], 12.ii.1970, to meloid bait, 19 ♂♂, (J. C. van Hille) (AMSA); Storms River Mouth [3323DD], 18.ii.1970, 1 ♂, (J. C. van Hille) (AMSA); Simonstown [3418AB], 12–20.iv.1915, 2 ♂♂, 7 ♀♀, (Dr M. Cameron) (BMNH).

Anthicus (Aulocoderus) bedfordi spec. nov., Figs 173–176

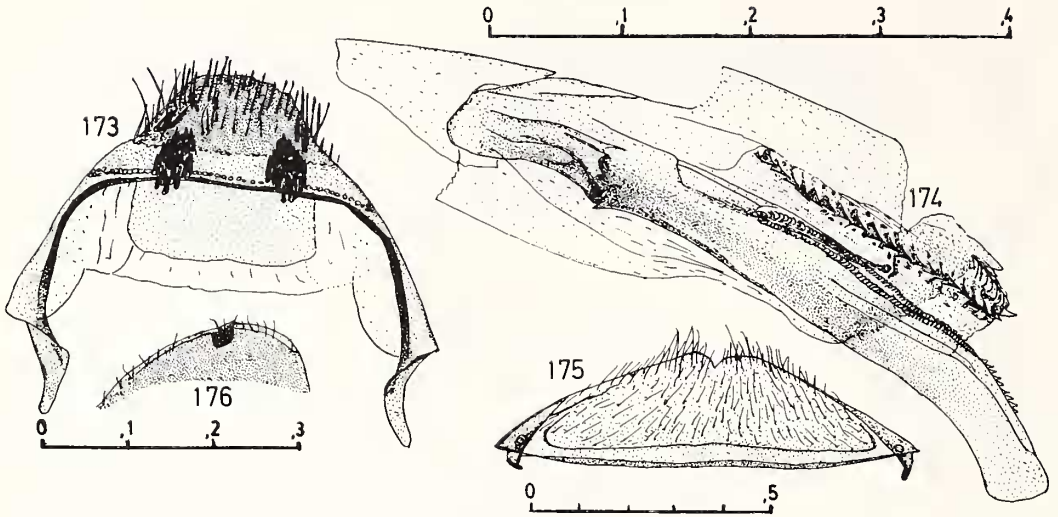
Size. Length 2,60 mm; width over broadest part of elytra 0,96 mm.

Head. Glossy, very dark testaceous; posterior arch broad, roundly diverging to eyes; punctures close and fine with procumbent hairs. Eyes small, slightly bulging.

Prothorax. Glossy, dark testaceous, broader than long, slightly broader than head; shoulders round; lateral constrictions close to base, connected by transverse dorsal groove having long hairs at sides but not in median region; punctures fine with recumbent hairs, slightly longer than on head.

Elytra. Dark testaceous with two pairs of light maculae with vague outline, anterior pair especially is indistinct in surface view as maculae are covered by glistening silvery hairs; posterior pair of maculae not covered by silvery hairs and therefore more visible; elongate in shape; male without apical point but with short dark notch (Fig. 176); punctures distinct, with recumbent hairs which are longer than on prothorax.

Wings. Fully developed.



Figs 173–176. A. (*A.*) *bedfordi* spec. nov. 173: retracted abdominal segment of male. 174: aedeagus. 175: last exposed abdominal sternum of male. 176: apex of elytron of male.

Antennae. Dark testaceous; apical three segments slightly broader but not darker; last segment almost as long as two preceding ones together.

Legs. Dark testaceous.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 174): median lobe simple, laterally flattened, with very long genital opening with beaded margin; connecting membrane with dorsal row of about 28 teeth; tegmen with short apical piece and long basal piece. Retracted segment (Fig. 173): tergum with a pair of dark patches which consist of a group of short thick backward pointing hairs; in addition on each side a group of three similar hairs, lying laterally and distally to dark patches; with transverse row of fenestrae; sternum consisting of pair of narrow slightly sclerotized plates. Last exposed sternum (Fig. 175) with short apical indentation.

MATERIAL EXAMINED. South Africa: Johannesburg, Bedford Ridge [2628AA], xii.1949, Holotype ♂, Paratype ♂ (A. L. Capener) (AMSA); Middelburg, Transvaal [2429CD], 26.xi.1979, Paratype ♂ (J. C. van Hille) (AMSA).

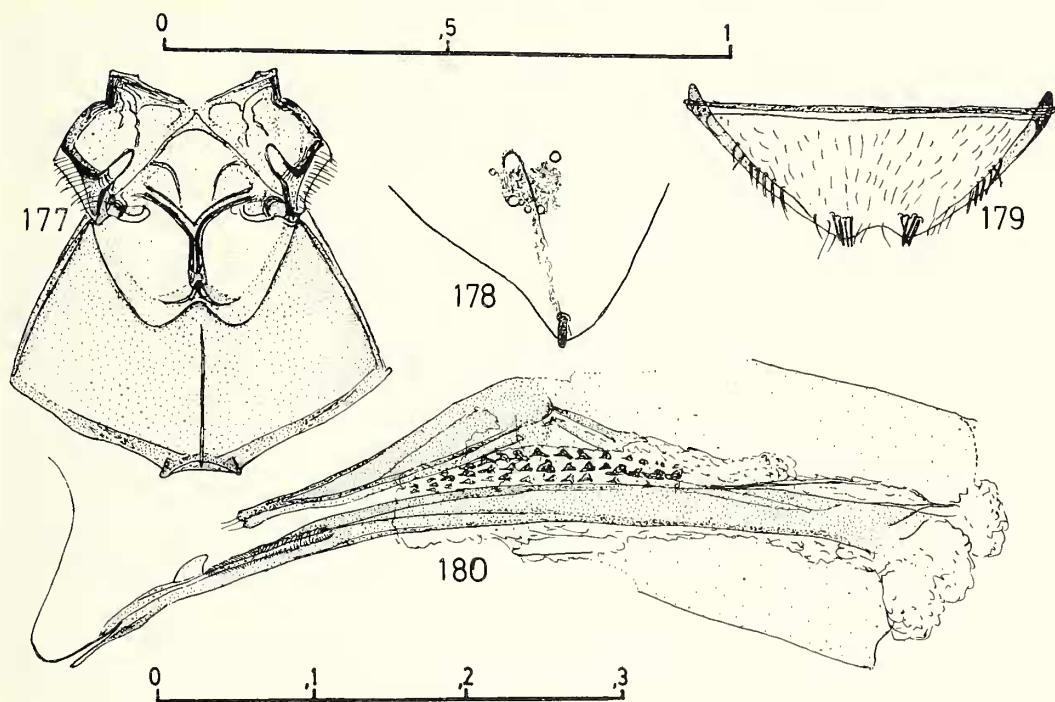
Anthicus (Aulacoderus) munroi spec. nov., Figs 177–180

Size. Length 2,15 mm (2,10–2,20); width over broadest part of elytra 0,81 mm (0,75–0,88).

Head. Glossy, dark testaceous; posterior arch round; distinctly punctured, hairs fine and procumbent; pair of erect lateral hairs half-way between neck and eyes. Eyes large and bulging.

Prothorax. Glossy, testaceous, somewhat lighter than head; broader than long, narrower than head; shoulders slightly angular, each shoulder with a long erect hair; some more erect hairs on dorsal surface; punctures distinct but absent on basal region, hairs recumbent; lateral constrictions well developed at $\frac{1}{3}$ of the length of the prothorax, connected by a transverse dorsal depression.

Elytra. Glossy, testaceous with dark transverse bands at base and middle and slightly



Figs 177-180. A. (*A.*) *munroi* spec. nov. 177: meso- and metathoracic sterna. 178: apex of clytron of male, hairs omitted. 179: last exposed abdominal sternum of male. 180: aedeagus.

darker at apex; oval in shape with well developed shoulders; with very fine punctures having recumbent hairs of same colour as part of elytron on which they are implanted; with a number of erect hairs along lateral margins. In male with small apical point with small dark blunt spine and elongate notch (Fig. 178).

Wings. Fully developed.

Antennae. Testaceous; three apical segments darker and broader; last segment as long as two preceding ones together.

Legs. Testaceous.

Undersurface. Rather dark testaceous, with abdomen darker than thorax; mesepimerite apophyses (Fig. 177) with spiral markings at base only, apical part light and transparent.

Male abdomen. Aedeagus (Fig. 180): median lobe slender, with fine long curved apical hair, subapical dorsal hook and proximal to this hook the oblong genital opening with beaded margin; connecting membrane with 15 transverse rows of three teeth each; tegmen: apical piece slender, ending in two narrow lobes; basal piece less than one and a half times as long as apical piece. Retracted segment: tergum semi-circular with flattish hairy apex, transverse dark line and parallel row of fenestrae; sternum consisting of pair of narrow thin plates, each with apical hair. Last exposed tergum has on each side a group of about 10 dark spiny hairs. Last exposed sternum (Fig. 179) with apical indentation with on each side four dark spiny hairs and half-way between apex and base a lateral row of 6-7 dark spiny hairs.

MATERIAL EXAMINED. South Africa: Pilgrims Rest [2430DD], 2.xi.1950, Holotype ♂, Paratype ♂, (H. K. Munro) (NCI); Mogoto [2429AC], to meloid bait, 24.x.1979, Paratypes 11 ♂♂ (M. W. Mansell) (AMSA).

In several specimens from Mogoto the elytral gland is visible in the preparation as a granular mass with small droplets; there is also a granular strand along the apical notch to the apical spine. (Fig. 178).

Anthicus (Aulacoderus) convexus Pic, Figs 181–186

Anthicus (Aulacoderus) convexus Pic, 1903a: 169

Size. Length 1,81 mm (1,65–1,90); width over broadest part of elytra 0,79 mm (0,75–0,88).

Head (Figs 185–186). Glossy, testaceous; posterior arch longitudinally oval; ventrally with median dark area from neck to base of labium, without punctures or hairs; dorsally with fine somewhat widely spaced punctures with fine procumbent hairs. Eyes bulging.

Prothorax. (Fig. 186). Glossy, testaceous, basal area lighter; slightly longer than broad, as broad as head; shoulders sloping and round; punctures coarser and closer than on head but absent on basal area; with fine recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, with long hairs.

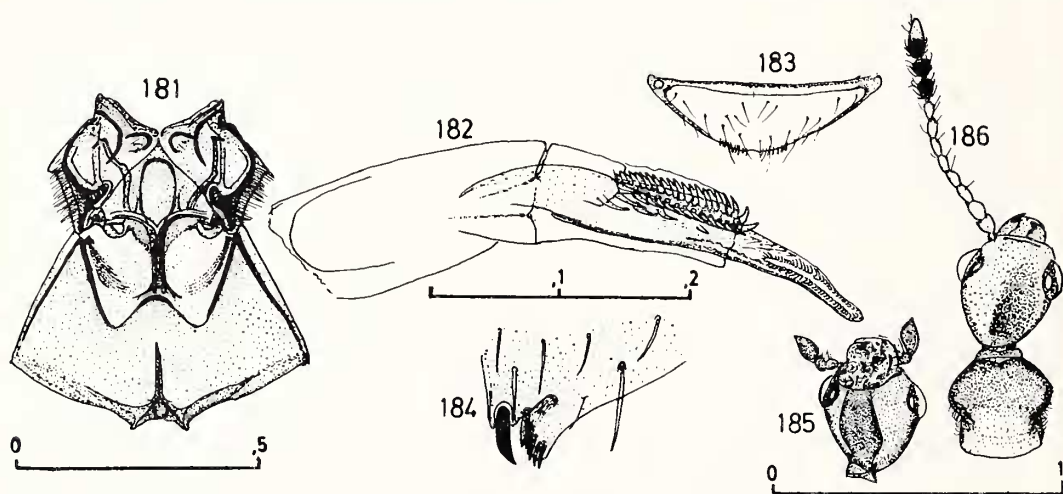
Elytra. Glossy, testaceous; oval, narrowing to apex; punctures coarser and more widely spaced than on prothorax and with recumbent hairs, longer than on prothorax; with a number of erect and semi-erect hairs along lateral margins. Male with oblique apical notch (Fig. 184) with a stout dark spine on its median side and a group of about six spiny hairs on lateral side.

Wings. Fully developed.

Antennae (Fig. 186). Slender, light testaceous; apical three segments broader and darker but apical half of last segment testaceous; last segment almost as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous; mesocoxal cavities angularly drawn out to the back (Fig. 181).



Figs 181–186. *A. (A.) convexus* Pic. 181: meso- and metathoracic sterna. 182: aedeagus. 183: last abdominal sternum of male. 184: apex of elytron of male. 185: head, ventral view. 186: head and prothorax, dorsal view.

Male abdomen. Aedeagus (Fig. 182): median lobe slender with elongate apical genital opening with beaded margin; connecting membrane with dorsal row of about 30 single teeth and about six non-aligned teeth near attachment of connecting membrane to base of median lobe; tegmen: basal piece more than three times as long as apical piece. Retracted segment: tergum with dark transverse line and uninterrupted proximal row of fenestrae; sternum consisting of pair of triangular non overlapping plates each with one apical hair. Last exposed sternum (Fig. 183) apically somewhat flat with some short spine-like hairs on each side of apex.

MATERIAL EXAMINED. South Africa: Malvern [2930DD], vi.1897, Type ♂, Pic det., (G. A. K. Marshall) (NMNH); Port St Johns [3129DA], vii-viii.1923 and vii.1929, 1 ♂, 2 ♀♀, Krekich det., (R. E. Turner) (BMNH); Eshowe [2831CD], vi-vii.1926, 3 ♂♂, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) mediofasciatus Pic, Figs 187-192

Anthicus (Aulacoderus) mediofasciatus Pic, 1903b: 184

Size. Length 1.83 mm (1.55-1.97); width over broadest part of elytra 0.76 mm (0.60-0.83).

Head (Fig. 192). Glossy, testaceous; posterior arch round with an erect hair on each side; punctures fine with short procumbent hairs. Eyes bulging.

Prothorax (Fig. 192). Glossy, testaceous, slightly lighter than head; broader than long, narrower than head; with two pairs of lateral angles, each with erect lateral hair; punctures fine with fine recumbent hairs; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, with long hairs.

Elytra. Glossy, usually plain testaceous but in some specimens with dark area in middle of each elytron which may reach median suture, thus forming an incomplete transverse band; in addition a darker basal area may occur in some specimens; the two elytra together are oval in shape, with round shoulders; punctures fine, with recumbent hairs somewhat longer than on prothorax and with a number of longer erect hairs along posterior lateral margin.

Wings. Fully developed in both sexes.

Antennae (Fig. 192). Plain testaceous or apical 3-4 segments slightly darker; last segment as long as two preceding ones together.

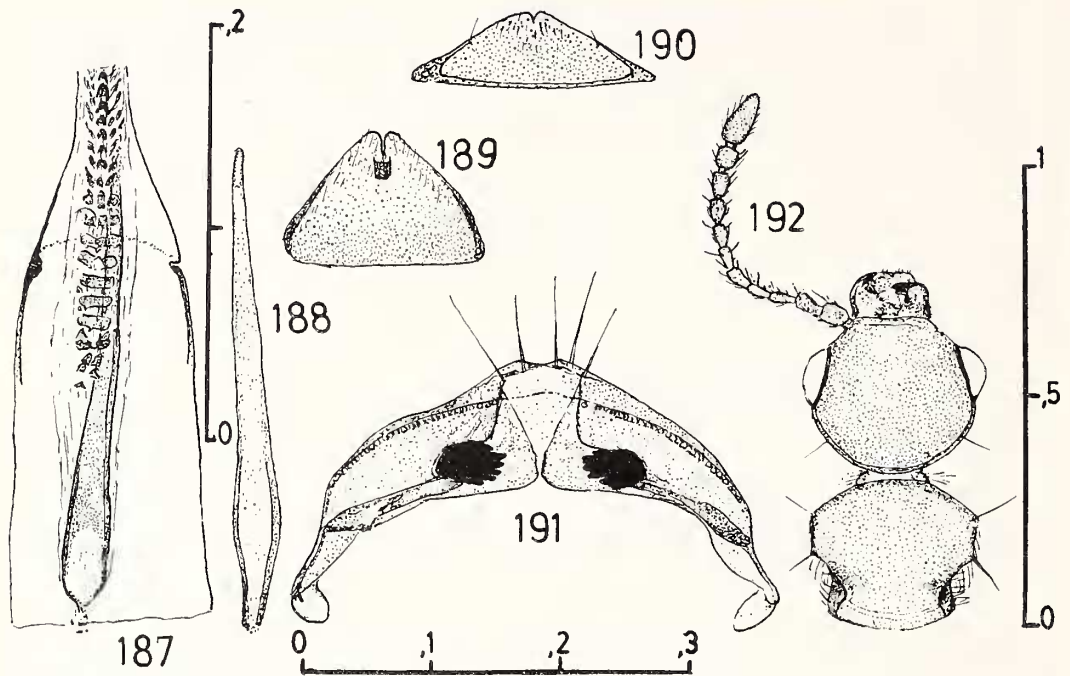
Legs. Testaceous.

Undersurface. Light testaceous, with sparse hairs.

Male abdomen. Aedeagus (Fig. 187): median lobe (Fig. 188) simple in shape with small oval genital opening with very finely beaded margin; connecting membrane with about 21 transverse rows of teeth which occur in threes in the region near the attachment to apical piece of tegmen but become fused to irregular shapes near attachment to base of median lobe; tegmen with basal piece about twice as long as apical piece. Retracted segment (Fig. 191): tergum with transverse row of small fenestrae, interrupted in the middle; sternum consists of two short sclerites of which distal margins are fused onto tergum; each sternal sclerite with black patch consisting of about ten short black bars which are held in a pouch which is open towards the median line (after dehydration these bars are brittle and when manipulated, break off with sharp edges), this structure does not occur in females and has not been found in any other species of *Aulacoderus*, function unknown. Last exposed sternum (Fig. 190) with short sharp apical indentation.

Female abdomen. Last exposed tergum (Fig. 189) with short sharp apical groove leading into a rectangular duplication of the integument.

MATERIAL EXAMINED. South Africa: Port St Johns [3129DA], 1-5.v.1923, 1 ♂, Krekich det., 1 ♂, (R. E. Turner) (BMNH); Mossel Bay [3422AA], v.1921, 1 ♂, (R. E. Turner)



Figs 187–192. *A. (A.) mediofasciatus* Pic. 187: aedeagus. 188: median lobe of aedeagus. 189: last exposed abdominal tergum of female. 190: last exposed abdominal sternum of male. 191: retracted abdominal segment of male. 192: head and prothorax.

(BMNH); Grahamstown [3326BC], to meloid bait, 17–29.vi.1948, 4 ♂♂, (J. C. van Hille) (AMSA); Grahamstown [3326BC], to light, iv.1951, 1 ♀, (B. Stuckenberg) (AMSA); Grahamstown [3326BC], Rhodes University Grounds, to meloid bait, x–xi.1952, 4 ♂♂, (J. C. van Hille) (AMSA); Sundays River Mouth [3325DB], 20.ix.1953, 1 ♂, (J. C. van Hille) (AMSA); Pirie Forest [3227CC], 4.xii.1954, 1 ♂, (L. Vári) (AMSA); Jansenville, Fairview [3227DC], 23.xi.1969, 2 ♂♂, (J. C. van Hille) (AMSA); Pluto's Vale [3326BA], to meloid bait, 28.ii.1979, 5 ♂♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) schimperi Pic, Figs 193–197

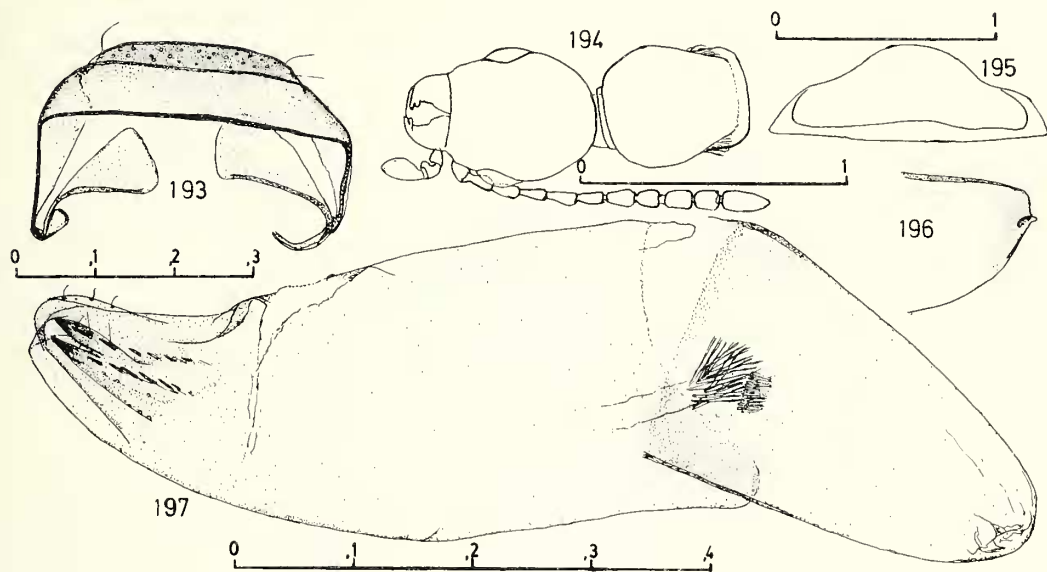
Anthicus schimperi Pic, 1898: 70

Size. Length 2,40 mm (2,12–2,90); width over broadest part of elytra 0,84 mm (0,80–0,88).

Head (Fig. 194). Glossy, black; posterior arch longitudinally oval; with fine punctures and fine silvery procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 194). Glossy, black, longer than broad, narrower than head; shoulders round; with fine punctures having silvery recumbent hairs; lateral constrictions shallow and with long lateral hairs.

Elytra. Somewhat glossy, black, elongate, rather closely punctured, with silvery recumbent hairs longer than on prothorax. In male with short apical notch and short point (Fig. 196).



Figs. 193-197. A. (*A.*) *schimperi* Pic. 193: retracted abdominal segment of male. 194: head and prothorax. 195: last exposed abdominal sternum of male. 196: apex of elytron of male. 197: aedeagus.

Wings. Well developed.

Antennae (Fig. 194). Dark testaceous; apical five segments gradually broader; last segment shorter than two preceding ones together.

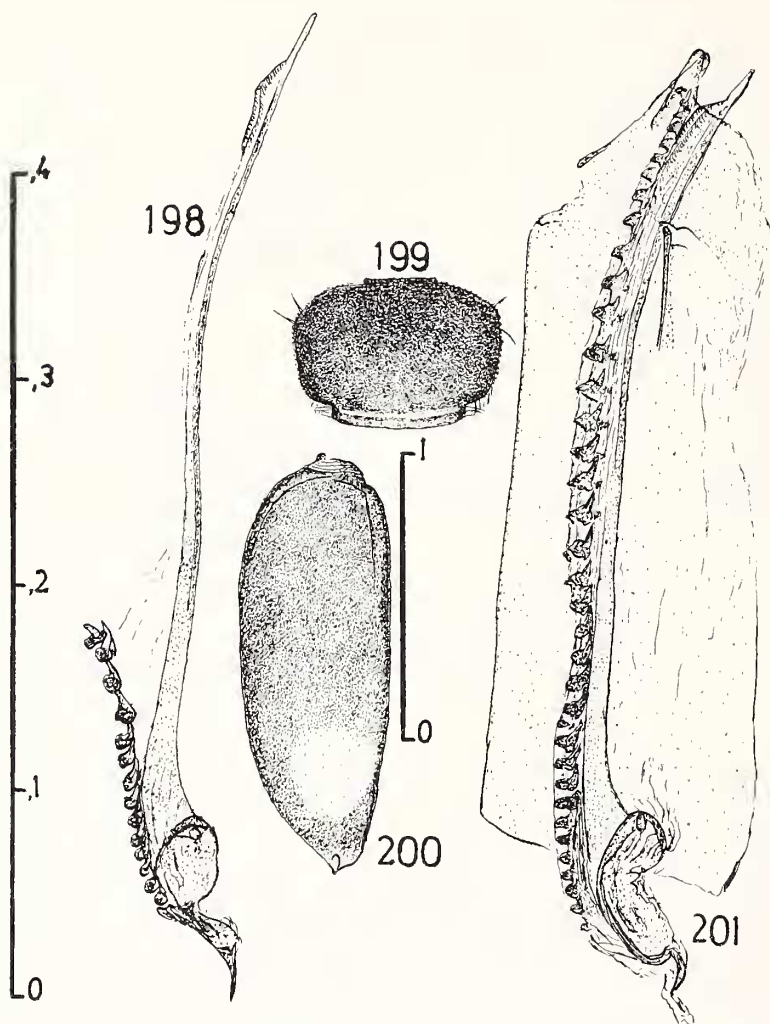
Legs. Dark testaceous.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 197); median lobe hardly sclerotized, ending in a pair of blunt lobes; connecting membrane with two longitudinal rows of seven fine teeth each; tegmen: apical and basal piece ventrally separated but dorsally continuous; apical piece ending in a pair of bluntly pointed lobes; at base of basal piece are two sets of spines, apparently surrounding ejaculatory duct; spines of distal ring longer than those of proximal ring; basal cap elongate. Retracted segment (Fig. 193): tergum broad with flat apex and transverse dark line, without row of fenestrae; sternum consisting of pair of thin triangular plates. Last exposed sternum (Fig. 195) with flat apex, laterally slightly excavated.

MATERIAL EXAMINED. Ethiopia: no date, Cotypes 5 ♂♂, (Schimper) (MNHN). N.E. Ethiopia: Tigré, no date, 3 ♂♂, Pic det., (no collector) (NMW).

In the description and in the Catalogus Coleoptorum (Pic 1913) this species is referred to as *Anthicus schimperi* Pic; no mention is made of the fact that it belongs to the subgenus *Aulacoderus* although the next species on the same page is called *Anthicus (Aulacoderus) bouvieri* n. sp. However, Pic mentions in the description that in *A. schimperi* the elytra are apically pointed and that the basal groove of the prothorax is laterally provided with white hairs, both features by which *Aulacoderus* differs from the other species of the genus *Anthicus*.



Figs 198–201. A. (*A.*) *morani* spec. nov. 198: median lobe of aedeagus with part of connecting membrane. 199: prothorax. 200: elytron of male. 201: aedeagus.

Anthicus (Aulacoderus) morani spec. nov., Figs 198–201.

Size. Length 2,41 mm (2,28–2,65); width over broadest part of elytra 1,00 mm (0,87–1,06).

Head. Slightly glossy, black; posterior arch almost rectangular with rounded angles toward eyes; with close punctures and short procumbent hairs. Eyes rather bulging.

Prothorax (Fig. 199). Slightly glossy, black, broader than long, broader than head; punctures close with short recumbent hairs and a number of erect hairs; lateral constrictions at $\frac{9}{10}$ of the length of the prothorax, with shortish hairs.

Elytra (Fig. 200). Somewhat glossy, black with a pair of subapical testaceous maculae which may appear orangy-red; punctures smaller and shallower than on head and prothorax, with fine recumbent hairs, longer than on prothorax, and several erect hairs, especially along posterior half of lateral margins.

Wings. Fully developed.

Antennae. Testaceous; apical 3–4 segments broader and darker.

Legs. Testaceous, coxae and femora darker.

Undersurface. Thorax testaceous, abdomen dark testaceous to black.

Male abdomen. Aedeagus (Fig. 201): median lobe (Fig. 198) long and very slender, with pointed apex and subapical genital opening with finely beaded margin; connecting membrane with about 35 single teeth; tegmen little sclerotized, basal piece three times as long as apical piece. Retracted segment: tergum with row of fenestrae, interrupted in middle; sternum consisting of a pair of elongate triangular plates. Last exposed sternum apically slightly indented.

MATERIAL EXAMINED. Rhodesia (now Zimbabwe): 50 miles east of Salisbury (now Harare), Holotype ♂, Paratypes 9 ♂♂, (V. C. Moran & C. N. Smithers) (AMSA).

Anthicus (Aulacoderus) chicarubiensis spec. nov., Figs 202–206

Size. Length 2,30 mm (2,08–2,57); width over broadest part of elytra 0,86 mm (0,80–1,05).

Head. Somewhat glossy, testaceous to dark testaceous; posterior arch broadly round; with short procumbent hairs and a pair of erect lateral hairs between eyes and neck. Eyes somewhat bulging.

Prothorax. Somewhat glossy, testaceous, lighter than head; shoulders sloping to lateral angles; each angle with long erect hair which is longer in male than in female; another pair of erect hairs in male half-way between shoulder angle and lateral constriction; in female this pair of erect hairs is absent; broader than long, narrower than head; punctures very fine with recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax.

Elytra (Fig. 204). Hardly glossy, testaceous with variable dark markings: usually with dark testaceous transverse band, just in front of middle which may, or may not, reach median suture; base and apex may be somewhat darker but in some specimens the dark markings are almost or completely absent; punctures larger and hairs longer than on prothorax.

Wings. Fully developed.

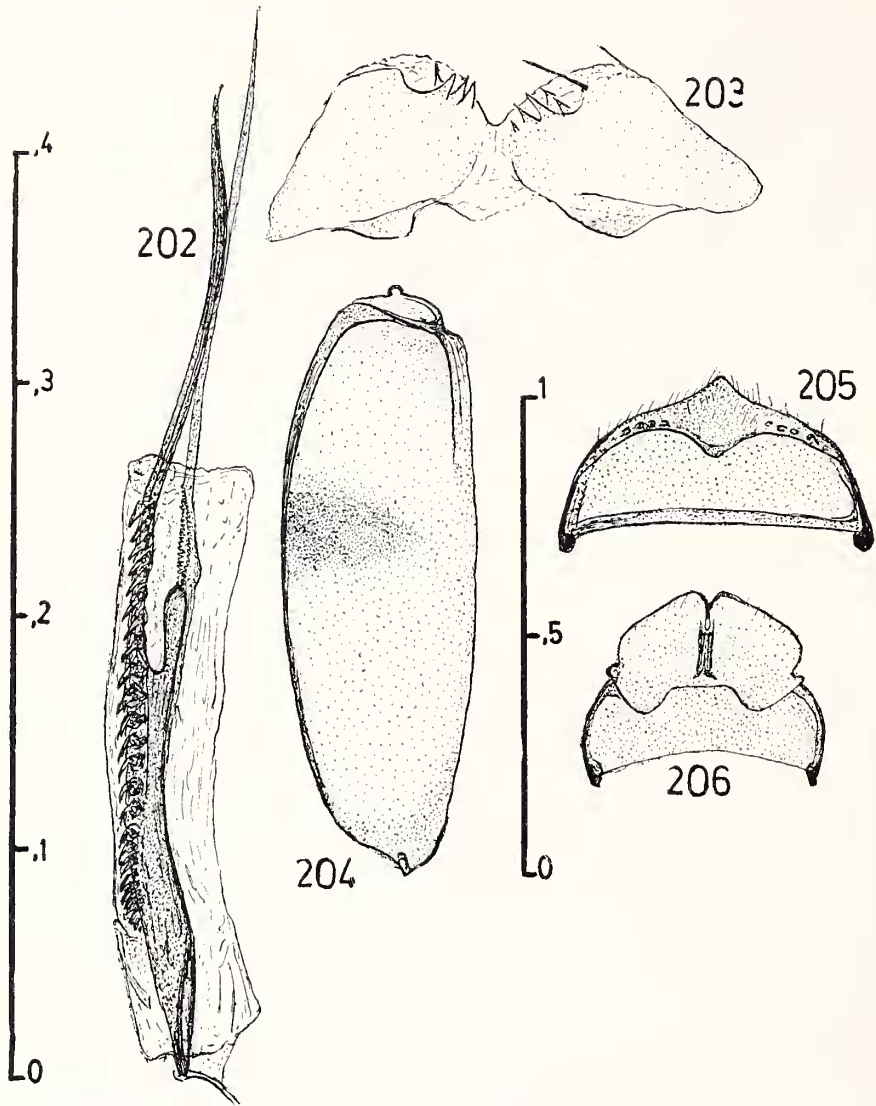
Antennae. Light testaceous; apical three segments darker and broader; last segment longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Thorax testaceous, abdomen dark testaceous to black.

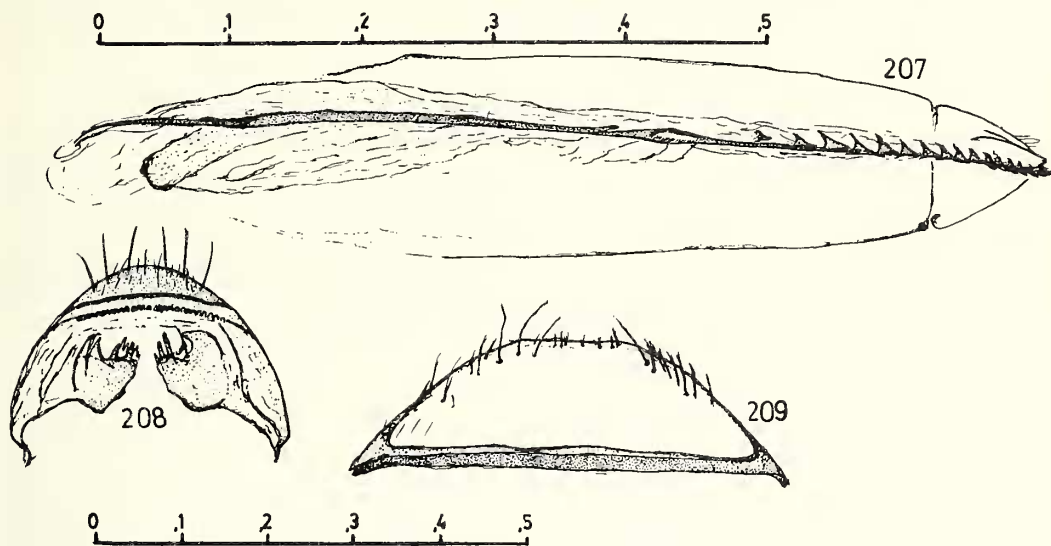
Male abdomen. Aedeagus (Fig. 202): median lobe with long point distal to genital opening; a dorsal spine attached proximally to genital opening is almost as long as the elongate apical point; connecting membrane with about 30 single teeth; tegmen with basal piece about five times as long as apical piece. Retracted segment: tergum with transverse dark line and parallel proximal row of fenestrae; sternum (Fig. 203) divided into two plates, very little sclerotized, with on each side 4–5 backwards pointing soft spines. Last exposed sternum rather long, apically very slightly indented.

Female abdomen. Last exposed tergum (Fig. 206) apically divided in two and with ventral margined groove; proximal to this groove tergum has a curved transverse line. Last exposed sternum (Fig. 205) apically pointed with inwards folded margin on dorsal surface with 5–6 blunt tubercles on each side.



Figs 202-206. A. (*A.*) *chicarubiensis* spec. nov. 202: aedeagus. 203: sternum of retracted abdominal segment of male. 204: elytron of male. 205: last exposed abdominal sternum of female. 206: last exposed abdominal tergum of female.

MATERIAL EXAMINED. Rhodesia (now Zimbabwe): Chicarubi Estate near Salisbury (now Harare), 2.xii.1956, Holotype ♂, Paratypes 9 ♂♂, (C. N. Smithers) (AMSA); Salisbury (now Harare), 19.i.1957, Paratypes 10 ♂♂ (R. M. Arnold) (AMSA); Salisbury (now Harare), Edge of maize field, 12.ii.1957, Paratypes 6 ♂♂, (C. N. Smithers) (AMSA); Salisbury (now Harare), The Grange, sweeping at dusk, i-ii.1894, Paratype 1 ♂, (G. A. K. Marshall) (BMNH).



Figs 207–209. A. (*A.*) *stephani* spec. nov. 207: aedeagus. 208: retracted abdominal segment of male. 209: last exposed abdominal sternum of male.

Anthicus (Aulacoderus) stephani spec. nov., Figs 207–209

Size. Length 1,83 mm (1,78–1,91); width over broadest part of elytra 0,71 mm (0,65–0,75).

Head. Somewhat glossy, testaceous to dark testaceous; posterior arch broadly round; with fine punctures and short white procumbent hairs; a pair of long lateral erect hairs half-way between eyes and neck. Eyes with dark margin, not much bulging.

Prothorax. Somewhat glossy, testaceous, lighter than head; broader than long, almost as broad as head; shoulders sloping and angular, with long erect lateral hair on angle and another pair of lateral erect hairs half-way between shoulder and posterior margin. Punctures fine, with short white recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of prothorax.

Elytra. Hardly glossy, testaceous with darker area just before middle, not sharply outlined and reaching neither lateral margin nor median suture; punctures fine with recumbent hairs, not much longer than on prothorax; with a number of erect hairs, especially along lateral margins and on apical area.

Wings. Fully developed.

Antennae. Testaceous, three apical segments darker and broader; last segment as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 207): median lobe very thin and long, with subapical genital opening with finely beaded margin; with small blunt dorsal spine proximal to genital opening; connecting membrane with dorsal row of about 17 single teeth; tegmen little sclerotized, with basal piece five times as long as apical piece. Retracted segment (Fig. 208): tergum with transverse subapical dark line and parallel row of fenestrae; sternum consisting of pair of thin plates with an asymmetrical arrangement of backward pointing soft spines. Last exposed sternum (Fig. 209) with flat apex.

MATERIAL EXAMINED. South Africa: 16 miles west of Pretoria [2527DB], 26.xii.1952, Holotype ♂, Paratypes 3 ♂♂, (C. N. Smithers) (AMSA).

Anthicus (Aulacoderus) nemoralis spec. nov., Figs 210–213

Size. Length 2,70 mm; width over broadest part of elytra 0,95 mm.

Head (Fig. 212). Glossy, dark testaceous; posterior arch round; with fine punctures and short, somewhat irregular procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 212). Glossy, lighter testaceous than head; longer than broad, narrower than head; shoulders much sloping; punctures fine with fine short somewhat irregularly recumbent hairs; lateral constrictions in front of posterior third, with long hairs.

Elytra. Glossy, light testaceous to testaceous, surrounded by dark margin which is broader along median suture than along lateral margins; light central area reaches lateral margins only just behind shoulders; punctures coarser and more widely spaced than on prothorax.

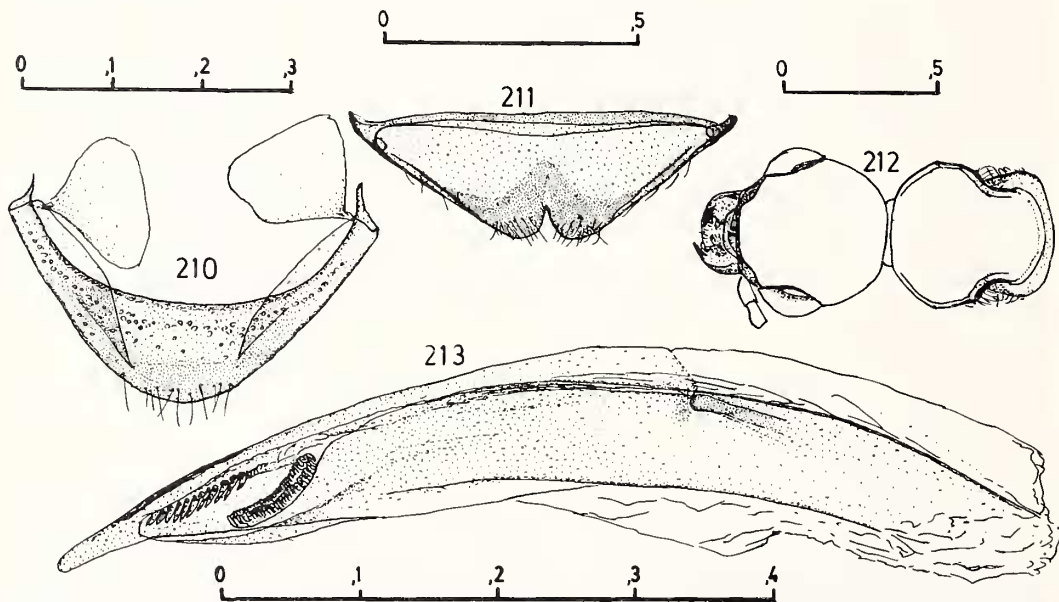
Wings. Fully developed.

Antennae. First two segments light testaceous, the rest is missing in the only specimen available.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax; mesocoxal cavities somewhat elongated backwards but not as much as in *A. convexus* (Fig. 181).

Male abdomen. Aedeagus (Fig. 213): median lobe dorsally convex; with oval subapical genital opening with prominently grooved margin; connecting membrane with dorsal row of about 11 single teeth; tegmen: basal piece shorter than apical piece which ends in a single blunt apex. Retracted segment (Fig. 210): tergum with round apex with some long hairs and a rather irregular arrangement of fenestrae; sternum consisting of a pair of broad short thin plates. Last exposed sternum (Fig. 211) with sharp apical indentation.



Figs 210–213. *A. (A.) nemoralis* spec. nov. 210: retracted abdominal segment of male. 211: last exposed abdominal sternum of male. 212: head and prothorax. 213: aedeagus.

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

MATERIAL EXAMINED. Ivory Coast: Tonkoui, C. I. Forêt prim. 900–1 200 m, 20–30.ix.1946, Holotype ♂, (A. Villiers) (NMW).

The specimen has two labels, both in Pic's handwriting:

- (1) 'ressemble un peu à *massarti* Pic'
- (2) 'plus robuste, élytres moins rétrécis en avant, moins clairs'.

Anthicus (Aulacoderus) minimus Pic, Figs. 214–218

Anthicus (Aulacoderus) minimus Pic, 1952a: 79

Size. Length 1,57 mm (1,35–1,70); width over broadest part of elytra 0,59 mm (0,55–0,63).

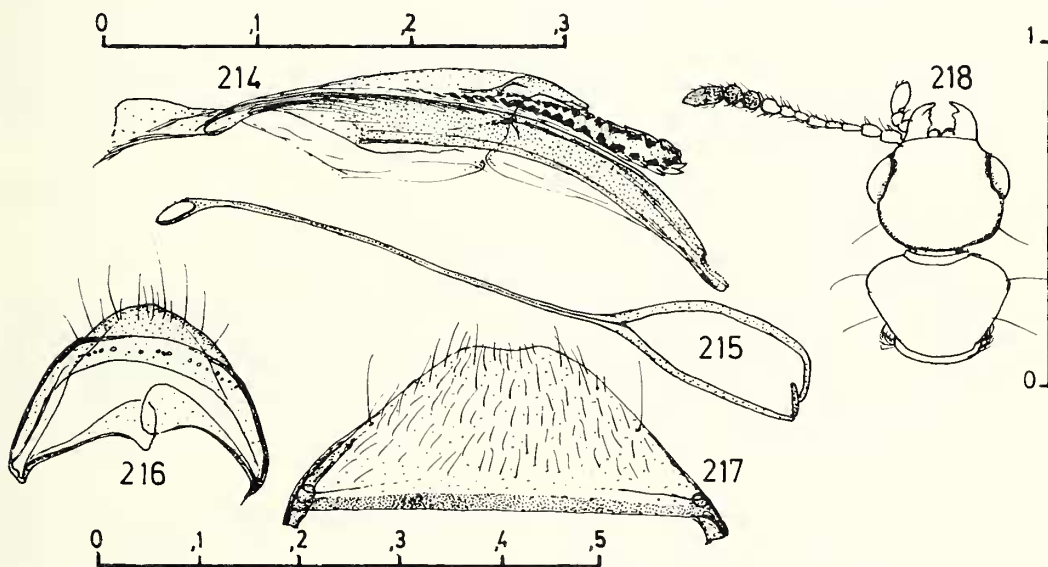
Head (Fig. 218). Glossy, testaceous to dark testaceous; posterior arch broadly round, with a pair of erect lateral hairs behind eyes; punctures fine with short procumbent hairs. Eyes rather large and bulging.

Prothorax (Fig. 218). Light testaceous to testaceous; broader than long, broader than head; shoulders round; with two pairs of long erect lateral hairs; lateral constrictions inconspicuous but well supplied with hairs forming a basal hairband; punctures closer than on head, hairs longer and recumbent.

Elytra. Somewhat glossy, testaceous without markings, a little darker than prothorax but lighter than head; with round shoulders; with fine punctures and recumbent hairs, longer than on prothorax; with a number of longer erect and semi-erect hairs.

Wings. Reduced, shorter than elytra.

Antennae (Fig. 218). Light testaceous, apical three segments somewhat darker and broader; last segment almost as long as two preceding ones together.



Figs 214–218. A. (*A.*) *minimus* Pic. 214: aedeagus. 215: spiculum gastrale of male. 216: retracted abdominal segment of male. 217: last exposed abdominal sternum of male. 218: head and prothorax.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 214): median lobe simple, ventral side concave, with small apical genital opening; connecting membrane with dorsal row of 28 single teeth; tegmen little sclerotized, basal piece longer than apical piece. Retracted segment (Fig. 216): tergum with transverse subapical dark line and parallel more proximal row of fenestrae, interrupted in the middle; sternum consisting of a pair of thin plates, broadening toward apex. Spiculum gastrale (Fig. 215) very slender, the two Y-arms turned inwards. Last exposed sternum (Fig. 217) with flat apex, hardly indented.

MATERIAL EXAMINED. Congo (now Zaire): Lulua, Kapanga, iii.1933, 3 ♂♂, (F. G. Overlaet) (MRAC).

These specimens were named by P. Bonadona; they were collected at the type locality by the same collector who collected the type a month later.

Anthicus (Aulacoderus) simoni Pic, Figs 219–222

Anthicus (Aulacoderus) simoni Pic, 1895a:106

Size. Length 1,86 mm (1,70–2,05); width over broadest part of elytra 0,68 mm (0,58–0,75).

Head. Glossy, testaceous; posterior arch semi-circular, slightly diverging to eyes; with fine procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 222). Less glossy than head, light testaceous to testaceous; longer than broad, narrower than head; with round sloping shoulders; punctures very fine with recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with fine hairs.

Elytra (Fig. 221). Glossy, light testaceous with dark transverse band in middle and narrow dark line near apex, not always reaching lateral margins but extending forward along median suture; in some specimens the whole posterior half is dark. Behind dark band in middle the elytra narrow to apex. In some specimens the posterior half appears milky white; this is the area where the elytral gland lies in males which opens at apical notch. Punctures very fine with dark recumbent hairs, but light hairs in front of transverse dark line.

Wings. Fully developed.

Antennae. Testaceous, last three segments somewhat darker and broader; last segment shorter than two preceding ones together.

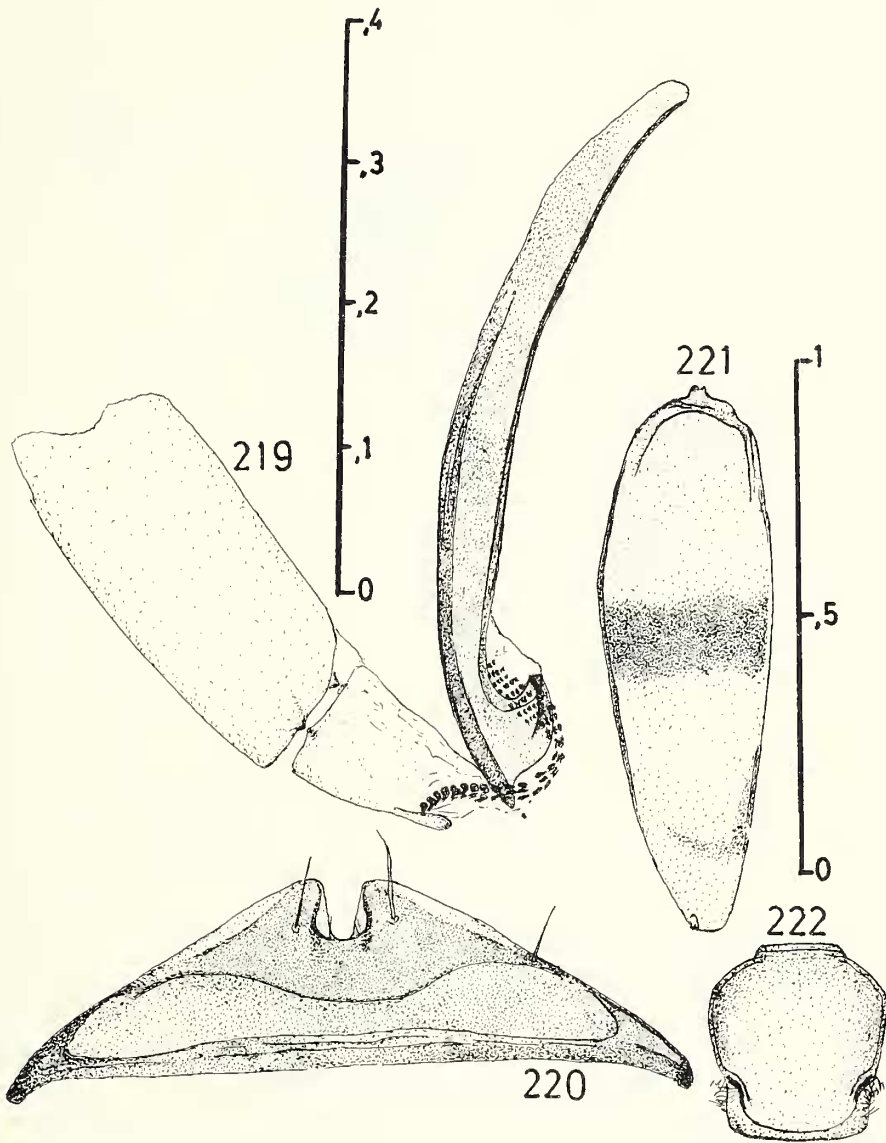
Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

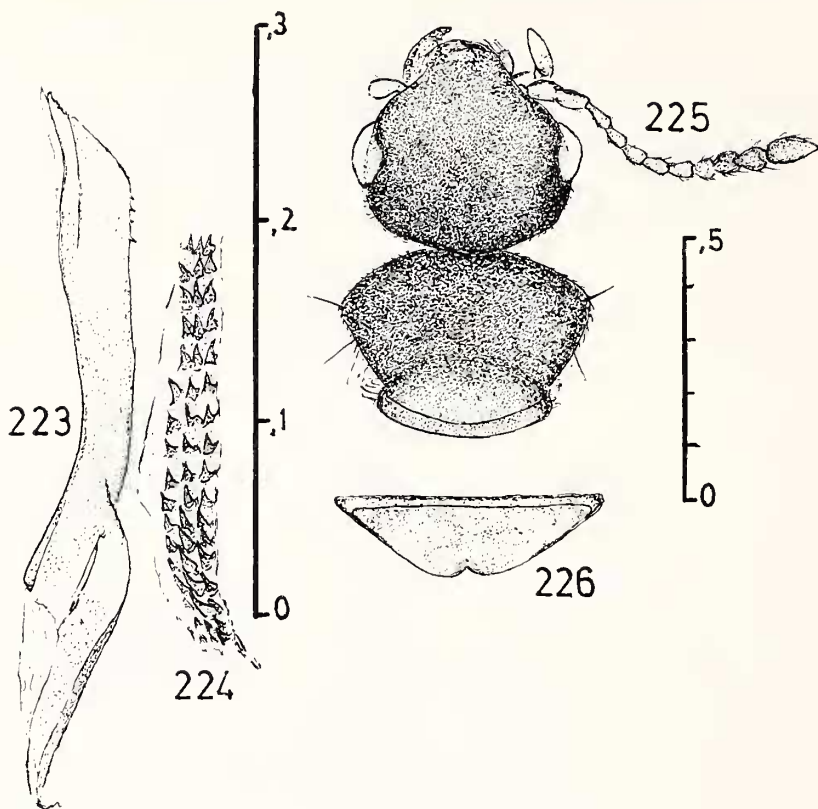
Male abdomen. Aedeagus (Fig. 219): median lobe ventrally concave with broad ventral basal hook; genital opening apical without beaded margin; connecting membrane with about 27 transverse rows of up to 5 teeth each; tegmen lightly sclerotized, basal piece more than twice as long as apical piece. Retracted segment: tergum with transverse row of fenestrae, interrupted in middle, without dark transverse line; sternum consisting of pair of narrow sclerites. Last exposed sternum (Fig. 220) with round apical indentation.

Identified from drawing of P. Bonadona (private communication).

MATERIAL EXAMINED. South Africa: 16 miles west of Pretoria [2527DB], to meloid bait, 26.xii.1952, 62 ♂♂, (C. N. Smithers) (AMSA).



Figs 219-222. A. (*A.*) *simoni* Pic. 219: aedeagus. 220: last exposed abdominal sternum of male. 221: elytron of male. 222: prothorax.



Figs 223–226. A. (*A.*) *inopinans* Krek. 223: median lobe of aedeagus. 224: part of dorsal row of teeth of connecting membrane of aedeagus. 225: head and prothorax. 226: last exposed abdominal sternum of male.

Anthicus (Aulacoderus) inopinans Krekich, Figs 223–226

Anthicus (Aulacoderus) inopinans Krekich, 1914: 5

Size. Length 1,90 mm (1,77–2,25); width over broadest part of elytra 0,73 mm (0,62–0,83).

Head (Fig. 225). Glossy, dark testaceous to black; posterior arch broad with round angles towards eyes, with short procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 225). Somewhat glossy, same colour as head; broader than long, broader than head; shoulders slightly angular; with fine recumbent hairs, slightly denser than on head and two pairs of erect lateral hairs; lateral constrictions at $\frac{2}{5}$ of the length of the prothorax, with fine long hairs.

Elytra. Glossy, dark testaceous, lighter than head and prothorax; rather short and broad; recumbent hairs longer than on prothorax; a few semi-erect longer hairs along posterior half of lateral margins.

Wings. Fully developed.

Antennae (Fig. 225). Dark testaceous, four apical segments gradually somewhat darker and broader; last segment as long as two preceding ones together.

Legs. Dark testaceous.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 223) with five minute spines on dorsal margin; genital opening apical with very finely beaded margin; connecting membrane (Fig. 224) with about 25 transverse rows of three teeth each; tegmen lightly sclerotized with bluntly pointed apex. Retracted segment: tergum with dark transverse line separating darker apical from lighter proximal area, latter has transverse row of fenestrae in its middle; sternum consisting of a pair of narrow curved sclerites. Last exposed sternum (Fig. 226) with small apical indentation.

MATERIAL EXAMINED. Deutsch Ost Afrika (now Tanzania): Vulkangebiet am Kivu, no date, Types 6 ♂♂, det. Krekich, (S. G. Schlobach) (NMW).

The locality of this species is problematic. Lake Kivu lies between Zaire and Ruanda and was never part of Tanzania (Deutsch Ost Africa or Tanganyika). The volcanic area probably refers to the Virunga Mountains which lie north-east of Lake Kivu in Ruanda and south-west Uganda. It is doubtful whether the mountains in the west of Tanzania can be considered as part of the volcanic area. (For this information the author is indebted to Miss C. E. Bos, Cand. soc. Geogr., Amsterdam).

Krekich mentions that these specimens were found in a parcel of large Scarabaeidae, sent by Major Schlobach from Deutsch Ost Africa. The contents had gone mouldy and in the packet were found 286 specimens of this *Aulacoderus* which were all males. Krekich suggests a parallel with observations he made on *Formicomus gestroi* Pic where males and females should have different times of hatching and different lifespans. It seems more probable that among the mouldy Scarabaeidae were some Meloidae which attracted the *Aulacoderus* males. As the parcel was sent off from Tanzania; it may well be that the *Aulacoderus* males are from Tanzania and have never been near Lake Kivu.

Anthicus (Aulacoderus) termitophilus Pic, Figs 227–230

Anthicus (Aulacoderus) termitophilus Pic, 1952b: 22

Size. Length 1,79 mm (1,77–1,80); width over broadest part of elytra 0,64 mm (0,60–0,68).

Head (Fig. 230). Glossy, black; posterior arch broadly round; coarsely and densely punctured, with fine grey procumbent hairs and a pair of lateral erect hairs on posterior margin, half-way between eyes and neck. Eyes not much bulging.

Prothorax (Fig. 230). Glossy, dark testaceous to black; broader than long, broader than head; coarse and dense punctures with grey recumbent hairs, coarser than on head; lateral constrictions inconspicuous, represented by a pair of densely hairy patches; base with narrow margin.

Elytra. Dark testaceous, elongate; punctures finer than on prothorax, especially in apical region; hairs recumbent, rather coarse and longer than on prothorax; with many erect hairs, especially on shoulders and along lateral margins of apical region. Male with elongate apical notch (Fig. 228).

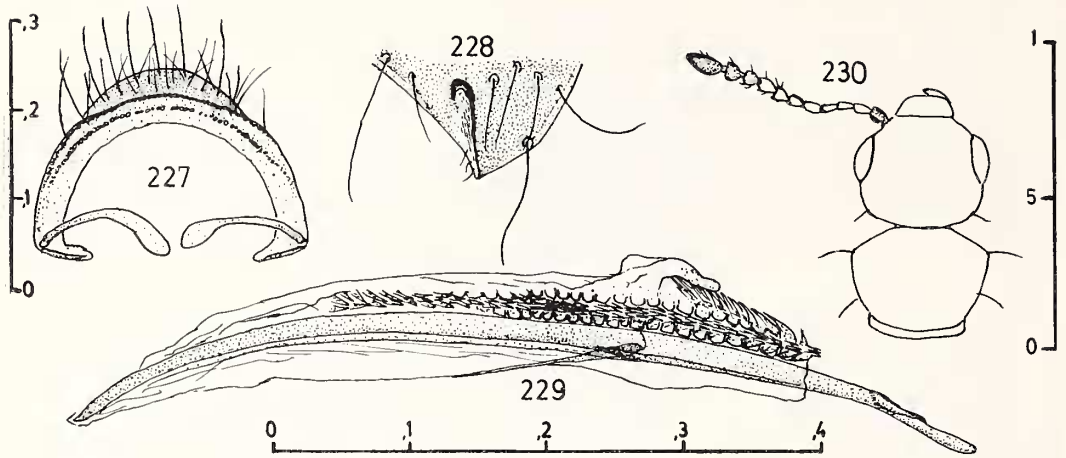
Wings. Fully developed.

Antennae (Fig. 230). Testaceous, rather short; first proximal and apical three segments somewhat broader and little darker; last segment as long as two preceding ones together.

Legs. Testaceous, femora and tibiae darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 229): median lobe ventrally convex, with blunt apex and



Figs 227-230. *A. (A.) termitophilus* Pic. 227: retracted abdominal segment of male. 228: apex of clytron of male. 229: aedeagus. 230: head and prothorax.

subapical genital opening with beaded margin; connecting membrane with about 50 transverse rows of three teeth each, only near attachment to tegmen the teeth are single; tegmen membranous, basal piece four times as long as apical piece. Retracted segment (Fig. 227): tergum semi-circular with dark transverse ridge and parallel proximal row of fenestrae; sternum consisting of a pair of narrow sclerites. Last exposed sternum with small apical indentation. Contents of rectum consist of some debris and some dark fungus spores.

MATERIAL EXAMINED. Congo (now Zaire): Massif des Kundelungu, dans une petite termitière épiquée. 15.i.1949, 2 ♂♂, (N. Leleup) (MRAC).

As these two specimens were collected at the same time as the type and at the type locality, they must form part of the type series.

There seem to be no anatomical adaptations to life in a termite heap.

SECTION 7

In the ten species of this section the median lobe of the aedeagus has a narrow ventral apical or subapical spine. All the species occur in South Africa, Cape Province; *A. recognitus* also occurs in the Orange Free State and *A. rotundipennis* and *A. bicoloritarsis*, which both have a strictly coastal distribution, also occur in Natal and the latter also in Mozambique. Three species also have a coastal distribution: *A. longicornis*, *A. hanstroemi* and *A. bicoloricornis*.

Key to the species of Section 7

- | | | |
|---|---|-----------------------|
| 1 | Connecting membrane of aedeagus with ventral sclerotization near attachment to median lobe | 2 |
| — | Connecting membrane of aedeagus without ventral sclerotizations | 3 |
| 2 | Ventral sclerotization of connecting membrane in the form of a short V (Figs 231 and 232) | <i>bicoloritarsis</i> |
| — | Ventral sclerotization of connecting membrane forms a pair of irregular structures (Fig. 233) | <i>colletti</i> |

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

- | | | |
|---|---|-----------------------|
| 3 | Ventral spine of median lobe of aedeagus pointing proximally almost parallel to shaft of median lobe | 4 |
| — | Ventral spine of median lobe of aedeagus pointing transversely or distally | 6 |
| 4 | Connecting membrane of aedeagus with 32–40 teeth; genital opening of male with beaded margin and with 5–6 spines on each side (Fig. 239) | <i>reverendus</i> |
| — | Connecting membrane of aedeagus with 27–28 teeth | 5 |
| 5 | Elytra dark with two pairs of light maculae, the anterior pair may be unclear (Fig. 240); male genital opening with beaded margin and on either side a row of about seven saw-like teeth (Fig. 238) | <i>tumefactus</i> |
| — | Elytra light testaceous with two incomplete dark bands (Fig. 244); spiculum gastrale with apical area in the form of a lightly sclerotized isosceles triangle (Fig. 246) | <i>longicornis</i> |
| 6 | Elytra dark with light shoulder macula and pair of round maculae on posterior half; connecting membrane of aedeagus with about 35 teeth (Figs. 247 and 248) | <i>recognitus</i> |
| — | No shoulder maculae on elytra | 7 |
| 7 | Median lobe of aedeagus straight and slender but with broad dark base (Figs 253 and 254) | <i>rotundipennis</i> |
| — | Median lobe of aedeagus without dark broad base | 8 |
| 8 | Sternum of retracted abdominal segment of male consisting of a pair of sclerites each ending in three dark points; elytra dark with pair of light maculae on posterior half (Fig. 257) | <i>bradfordi</i> |
| — | Sternum of retracted abdominal segment of male without dark points. | 9 |
| 9 | Ventral spine of median lobe of aedeagus pointing transversely (Fig. 262) | <i>hanstroemi</i> |
| — | Ventral spine of median lobe of aedeagus pointing obliquely distally (Fig. 268) | <i>bicoloricornis</i> |

Anthicus (Aulacoderus) bicoloritarsis Pic, Figs 231–232

Anthicus (Aulacoderus) bicoloritarsis Pic, 1948, 15.

Size. Length 1,91 mm (1,75–2,05); width over broadest part of elytra 0,82 mm (0,75–0,90).

Head. Glossy, black; posterior arch broadly transverse, diverging to eyes, strongly narrowing from eyes to mouthparts; distinctly punctured, with fine grey procumbent hairs. Eyes large and bulging.

Prothorax. Glossy, very dark testaceous to black; broader than long, narrower than head; shoulders round and broad; with two pairs of erect lateral hairs, anterior pair on shoulders, posterior pair half-way between shoulders and base; punctures closer than on head but scarce on basal area, with short grey recumbent hairs; lateral constrictions not prominent but marked by long lateral hairs and connected by dorsal transverse groove at $\frac{5}{8}$ of the length of the prothorax.

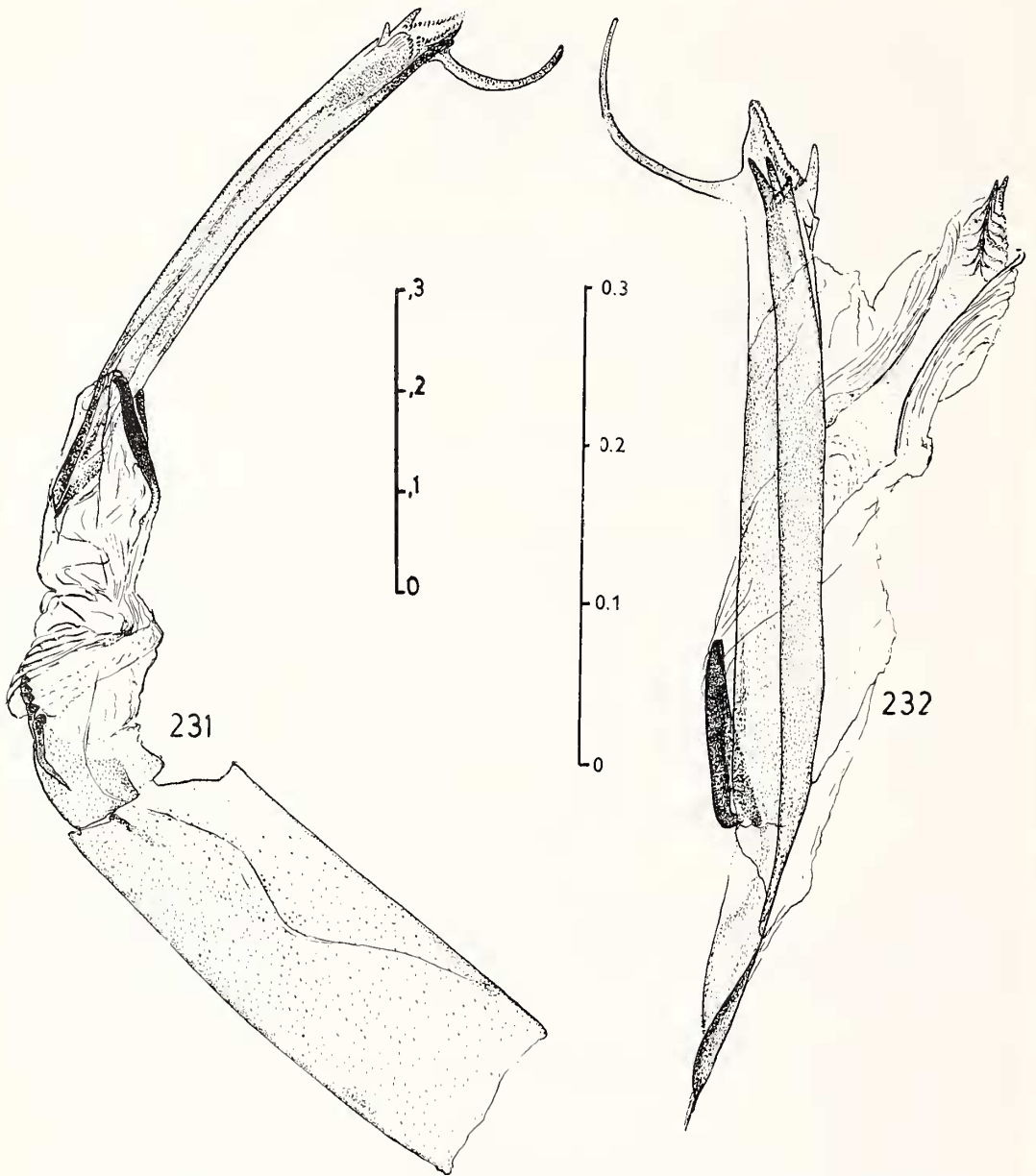
Elytra. Glossy, very dark testaceous to black; elongate in male with shoulders and pointed apex; in female without shoulders and apically obliquely truncate; punctures more widely spaced than on prothorax with fine recumbent hairs and a number of erect hairs, especially along lateral margins.

Wings. Fully developed in male, reduced in female.

Antennae. testaceous, first proximal and apical 5–6 segments darker; apical 3–4 segments broader; last segment almost as long as two preceding ones together.

Legs. Testaceous, coxae, distal half of femora and two apical tarsal segments darker.

Undersurface. Dark testaceous to black; in female metasternum and mesepimerite apophyses shorter than in male.



Figs 231-232. A. (*A.*) *bicoloritarsis* Pic. 231: aedeagus everted. 232: aedeagus inverted, connecting membrane torn open.

Male abdomen. Aedeagus (Figs 231 and 232): median lobe with long curved distally pointing ventral spine; genital opening with beaded margin and three short spines at proximal end of genital opening; connecting membrane with row of about seven single teeth and V-shaped ventral sclerite near attachment of connecting membrane to base of median lobe. When aedeagus is in resting position (Fig. 232) the arms of the V point forwards but in everted position (Fig. 231) the V turns with the connecting membrane and arms are pointing backwards; in some specimens the arms of the V are not fused at base; this condition comes close to that of *A. colletti* (Fig. 233) where however sclerotization is more irregular; tegmen with basal piece almost five times as long as apical piece. Retracted segment: tergum almost semi-circular, with some apical hairs and basal transverse row of fenestrae; sternum consisting of two narrow plates. Last exposed sternum with round apex.

MATERIAL EXAMINED. South Africa: along the whole South African coast, various dates, many specimens, (J. C. van Hille) (AMSA). Mozambique: Delagoa Bay, Inhaca Island, xii.1954, 2 ♂♂, 4 ♀♀, (E. McC. Callan) (AMSA).

This species was described from material sent by the author to Pic from Plettenberg Bay 3423AB. Pic mentions that this species should be placed near *A. robusticeps* Pic (1903a), described from Natal. In the collection of the Natural History Museum, Vienna, are four specimens, three from Port St Johns 3129DA and one from Mossel Bay 3422AA, all labelled '*robusticeps* Pic, det. v. Kreckich'; these specimens are all *A. bicoloritarsis* Pic. Judging from the description of *A. robusticeps* it seems likely that the two names are synonyms. Also it seems unlikely that such a common and widespread species should have been unnoticed till 1948. The younger name has been retained because, whereas type material of *A. (A.) robusticeps* Pic was not available, the author has seen Paratypes of *A. (A.) bicoloritarsis* Pic.

In addition to the black specimens there occur specimens with one or two pairs of light maculae on the elytra; the anterior maculae are often vague or absent. In one locality specimens with and without maculae may be found together; maculae occur more frequently in males than in females. No specimens with maculae have been found east of Mossel Bay 3422AA.

Anthicus (Aulacoderus) colletti **spec. nov.**, Figs 233–235

Size. Length 2,18 mm (2,05–2,37); width over broadest part of elytra 0,76 mm (0,70–0,81).

Head (Fig. 234). Glossy, testaceous; elongate, posterior arch round; rather coarsely punctured, with light procumbent hairs. Eyes bulging.

Prothorax (Fig. 234). Glossy, testaceous; broader than long, slightly broader than head; shoulders sloping and round; punctures rather coarse and dense but reduced on posterior quarter; with fine light recumbent hairs; lateral constrictions inconspicuous, not very hairy, connected by a dorsal basal transverse groove.

Elytra. Glossy, testaceous; rather slender and elongate; punctures coarse, less dense than on prothorax with fine light recumbent hairs, slightly longer than on prothorax.

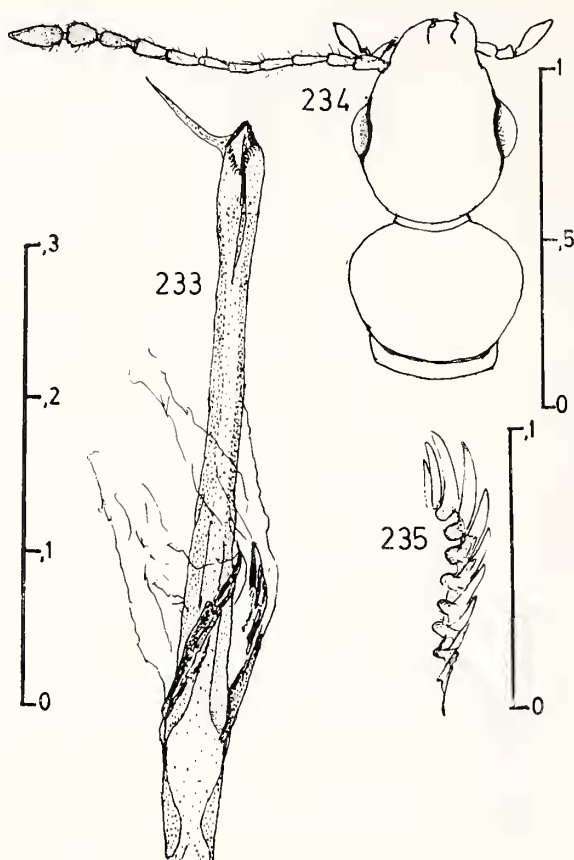
Wings. Fully developed in males; no females have been seen.

Antennae. Slender, testaceous; apical three segments darker and slightly broader; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous.

Male abdomen. Aedeagus: median lobe (Fig. 233) slender and simple, with terminal diamond-shaped genital opening with finely beaded margin, with straight backwards pointing ventral spine; connecting membrane with dorsal row of about 10 single teeth (Fig. 235); with somewhat irregular paired sclerotizations at ventral attachment to base of median lobe; tegmen



Figs 233–235. A. (*A.*) *colletti* spec. nov. 233: median lobe of aedeagus with part of connecting membrane, 234: head and prothorax. 235: dorsal row of teeth of connecting membrane of aedeagus.

with basal piece three to four times as long as apical piece. Retracted segment: tergum apically round and hairy, with basal transverse row of fenestrae; sternum consisting of a pair of thin elongate plates. Last exposed sternum broadly triangular with somewhat rounded apex.

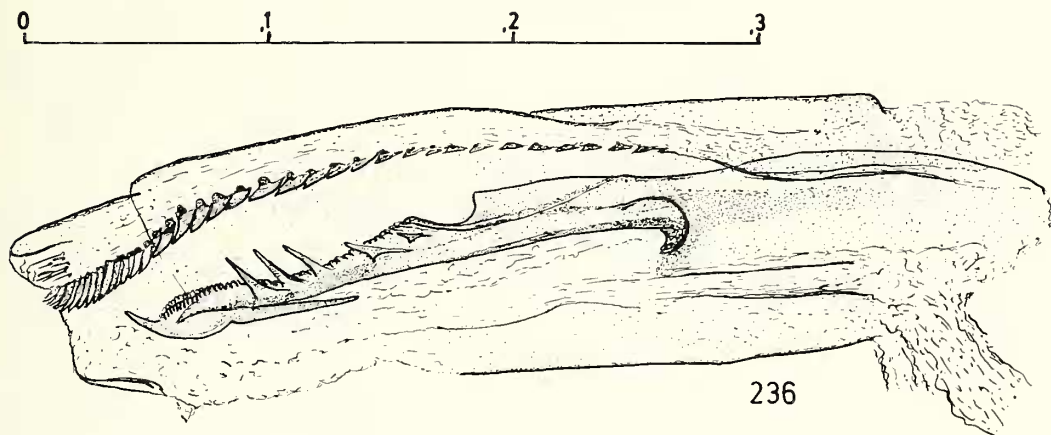
MATERIAL EXAMINED. South Africa: Keurbooms River Mouth [3322DD], xii.1948, Holotype ♂, (W. E. Collett) (AMSA); Sedgfield, Groenvlei, Lake Pleasant [3422BB], to meloid bait, 14.xii.1977, Paratypes 4 ♂♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) reverendus Pic, Fig. 236

Anthicus (Aulacoderus) reverendus Pic, 1903d, 180

Size. Length 2,44 mm (2,21–2,69); width over broadest part of elytra 0,81 mm (0,70–0,92).

Head. Glossy, dark testaceous to black; posterior arch broadly round; punctures fine with fine dark procumbent hairs. Eyes slightly bulging.



Figs 236. A. (*A.*) *reverendus* Pic. 236: aedeagus.

Prothorax. Glossy, dark testaceous but lighter at base; longer than broad, narrower than head; shoulders sloping and round; punctures fine, scarce on posterior quarter, with fine dark recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax with fine short hairs; without transverse basal groove.

Elytra. Somewhat glossy, dark testaceous with two pairs of lighter maculae which may reach lateral margins but not median suture; punctures larger than on prothorax with dark recumbent hairs, but on maculae hairs are light; anterior maculae may be indistinct or even absent but even then hairs are light in this area.

Wings. Fully developed.

Antennae. Testaceous, last three segments darker and somewhat broader; last segment not quite as long as two preceding ones together.

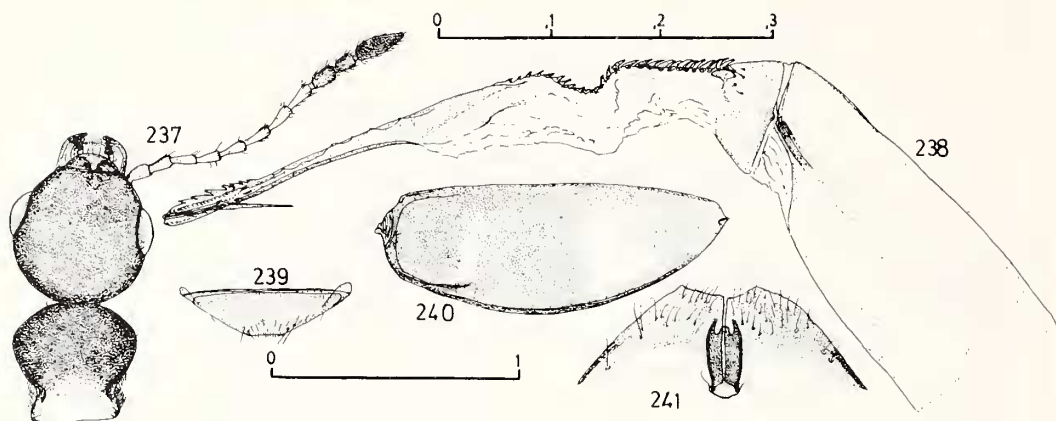
Legs. Testaceous, coxae and femora, especially distal part, somewhat darker.

Undersurface. Dark testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 236): median lobe: apex pointed and turned up dorsally; with ventral proximally pointing spine, parallel to shaft of median lobe; genital opening subapical and elongate, with beaded margin and on each side 5-6 distally pointing spines, decreasing in length from apex to base; with dorsal excavation immediately proximal to genital opening; this excavation is only visible when median lobe is seen in profile; connecting membrane with dorsal row of about 32-40 single teeth; tegmen with basal piece five times as long as apical piece. Retracted segment: tergum with apical region dark, with dark transverse line; more proximal a transverse row of fenestrae; sternum consisting of pair of narrow sclerites of which only proximal margin is well sclerotized. Last exposed sternum with flat apex.

MATERIAL EXAMINED. South Africa: Montagu [3320CC], x.1924, 1 ♂, Krekich det., (R. E. Turner) (NMW); Oudtshoorn [3322CA], 15-16.ix.1938, 1 ♂, (D. L. Uyttenboogaart) (ITZA); Worcester [3319CB], ix.1928, 1 ♂, (R. E. Turner) (BMNH); Willowmore [3319CB], x.1910, 1 ♂, xi.1914, 1 ♂, undated, 3 ♂♂, (Dr Brauns) (AMSA); Prince Albert [3322AA], to meloid bait, 25.ix.1953, 6 ♂♂, (J. C. van Hille) (AMSA).

In one of the Willowmore specimens the gut is full of pollen.



Figs 237-241. *A. (A.) tumefactus* Pic. 237: head and prothorax. 238: aedeagus. 239: last exposed abdominal sternum of male. 240: elytron of male. 241: apex of last exposed abdominal tergum of female.

Anthicus (Aulacoderus) tumefactus Pic, Figs 237-241

Anthicus (Aulacoderus) tumefactus Pic, 1901, 100

Anthicus (Aulacoderus) middletoniensis van Hille, 1961, 244

Size. Length 2,48 mm (2,15-2,72); width over broadest part of elytra 0,85 mm (0,80-0,92).

Head (Fig. 237). Glossy, very dark testaceous to black; posterior arch round; closely punctured with short procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 237). Very dark testaceous to black but posterior area testaceous; slightly broader than long, narrower than head; shoulders sloping and round; behind shoulders narrowing to well developed hairy lateral constrictions; punctures distinct and close, but indistinct on posterior quarter; hairs fine and recumbent.

Elytra (Fig. 240). Convex, glossy, very dark testaceous to black with two pairs of light maculae; anterior pair transverse, narrow and indistinct, posterior pair distinct and round; neither pair reaches median suture; punctures fine, less dense than on prothorax; hairs dark and recumbent but lighter finer and shorter on maculae.

Wings. Fully developed.

Antennae (Fig. 237). slender, testaceous, last three segments darker and slightly broader; last segment as long as two preceding ones together.

Legs. Testaceous, coxae and femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 238): median lobe with subapical proximally pointing ventral spine; genital opening apical and elongate with beaded margin; lateral to genital opening a row of about seven saw-tooth spines on each side; connecting membrane with about 27 single teeth; tegmen with basal piece five times as long as apical piece. Retracted segment: tergum with dark apical region with some apical hairs and transverse uninterrupted row of fenestrae; sternum consisting of a pair of thin narrow plates. Last exposed sternum (Fig. 239) with flat apex.

Female abdomen. Last exposed tergum (Fig. 241) with deep narrow apical slit, its proximal part covered by a dark duplication of integument.

MATERIAL EXAMINED. South Africa: Dunbrody [3325BC], 29.ix.1900, Type 1 ♀, (Fr O'Neil) (MNHN); Mossel Bay [3422AA], xi-xii.1931, 4 ♂♂, 1 ♀, (R. E. Turner) (BMNH); Mossel Bay [3422AA], 8-9.i.1951, 2 ♂♂, (Brinck & Rudebeck) (UEML); 15 miles south of Middleton [3326AB], 16.i.1951, 3 ♂♂, (Brinck & Rudebeck) (UEML 1 ♂, AMSA 1 ♂, SAM 1 ♂); Cape, Karroo, Farm Zwartzkraal 33.10S-22.32E, groundtraps with faeces bait, 1671a, 5 ♂♂, (R. Oosthuizen) (TMP).

The specimens collected by the Swedish expedition of Brinck and Rudebeck were described as *A. (A.) middletoniensis* van Hille (1961). With more material available and a more successful preparation of the aedeagus it was found that the median lobe of the aedeagus has a fine subapical spine which is invisible when the median lobe is mounted dorso-ventrally. It was also found that the connecting membrane has as many as 27 teeth. By comparison with the type from the museum in Paris the correct name could be established.

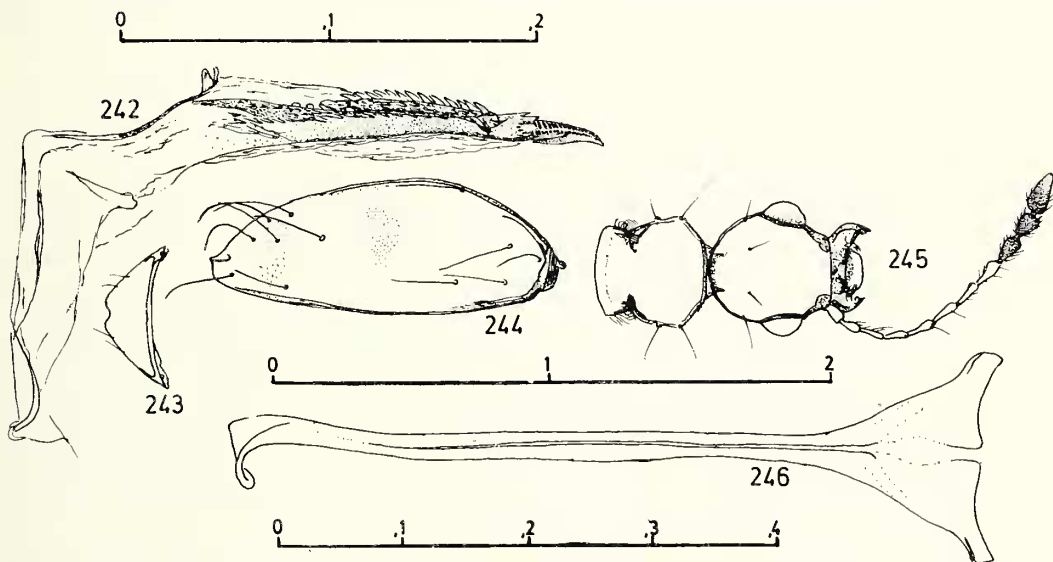
Anthicus (Aulacoderus) longicornis spec. nov., Figs 242-246

Size. Length 1.89 mm (1.87-1.90); width over broadest part of elytra 0.96 mm (0.94-0.98).

Head (Fig. 245). Glossy, light testaceous; posterior arch round; punctures rather coarse with fine short procumbent hairs; a pair of long erect lateral hairs behind eyes and another pair dorsally on posterior half. Eyes large and bulging.

Prothorax (Fig. 245). Somewhat glossy, light testaceous; as long as broad, narrower than head; shoulders angular, each with a long erect lateral hair; a similar pair of erect lateral hairs behind shoulders; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, each with a transverse, inwards pointing apophysis with spiral markings; punctures coarser than on head but absent on posterior quarter; hairs fine short and recumbent.

Elytra (Fig. 244). Glossy, light testaceous, each with somewhat darker areas in the middle



Figs 242-246. *A. (A.) longicornis* spec. nov. 242: aedeagus. 243: last exposed abdominal sternum of male. 244: elytron of male. 245: head and prothorax. 246: spiculum gastrale of male.

and subapically; punctures coarser and more widely spaced than on prothorax; with fine recumbent hairs, longer than on prothorax; with a number of very long semi-erect hairs.

Wings. Reduced, shorter than elytra.

Antennae (Fig. 245). Light testaceous; long and very slender; three apical segments broad and almost black; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Light testaceous.

Male abdomen. Aedeagus (Fig. 242): median lobe with apical proximally pointing ventral spine and apical genital opening with beaded margin; connecting membrane with about 28 teeth of which those near the attachment to the median lobe have additional side teeth; tegmen membranous, differentiation in apical and basal piece indistinct. Spiculum gastrale (Fig. 246) long and little sclerotized, without apical Y-arms but ending in an isosceles triangle. Retracted segment: tergum narrow, with round apex, with dark transverse line and parallel more proximal row of fenestrae; sternum consisting of pair of narrow little sclerotized plates. Last exposed sternum (Fig. 243) with small apical indentation.

MATERIAL EXAMINED. South Africa: Port St Johns [3124DA], i-v.1924, Holotype ♂, Paratypes 2 ♂♂, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) recognitus Pic, Figs 247-252

Anthicus (Aulacoderus) recognitus Pic, 1903d, 180

Size. Length 2.53 mm (2.27-2.68); width over broadest part of elytra 0.99 mm (0.87-1.01).

Head. Glossy, dark testaceous to black; posterior arch broad, with round angles, each with an erect lateral hair; punctures very fine with procumbent hairs. Eyes not much bulging.

Prothorax. Glossy, slightly lighter than head, posterior quarter much lighter; somewhat broader than long, slightly narrower than head; shoulders sloping, somewhat angular; with two pairs of lateral erect hairs; basal constrictions well developed with long hairs; punctures coarser than on head with dark recumbent hairs.

Elytra (Fig. 247). Glossy, dark testaceous with light testaceous macula on shoulder and round macula on posterior half; maculae not always distinct, especially not in females (see below); punctures as on prothorax with dark recumbent hairs but light on areas of maculae, also when maculae are unclear or absent; with a number of erect and semi-erect hairs.

Wings. Fully developed or reduced.

Antennae. Testaceous but first proximal and apical three segments darker, the latter somewhat broader; last segment as long as two preceding ones together in male, shorter in female.

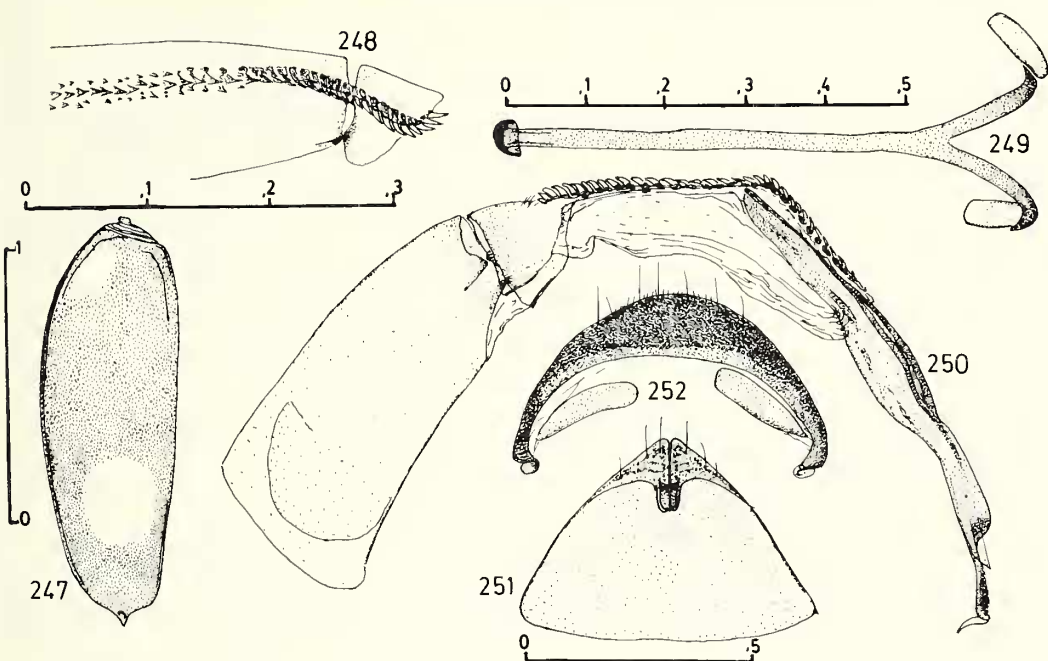
Legs. Testaceous, coxae, femora and last two tarsal segments darker.

Undersurface. Testaceous to dark testaceous.

Male abdomen. Aedeagus (Fig. 250): median lobe narrow, elongate and somewhat sinuous, with short apical ventral spine and elongate genital opening with beaded margin; connecting membrane with about 35 dorsal teeth, teeth nearest to attachment to base of median lobe accompanied by somewhat irregular lateral teeth; tegmen slightly sclerotized, basal piece about three times as long as apical piece (Fig. 248). Retracted segment (Fig. 252): tergum with round apex; apical area darker than proximal area, separated by transverse row of fenestrae; sternum consisting of pair of small thin plates. Spiculum gastrale (Fig. 249) Y-shaped with rectangular extraspicular sclerites with round angles. Last exposed sternum flat at apex.

Female abdomen. Last exposed tergum (Fig. 251) apically divided in two, the division ending in narrow cup-like structure.

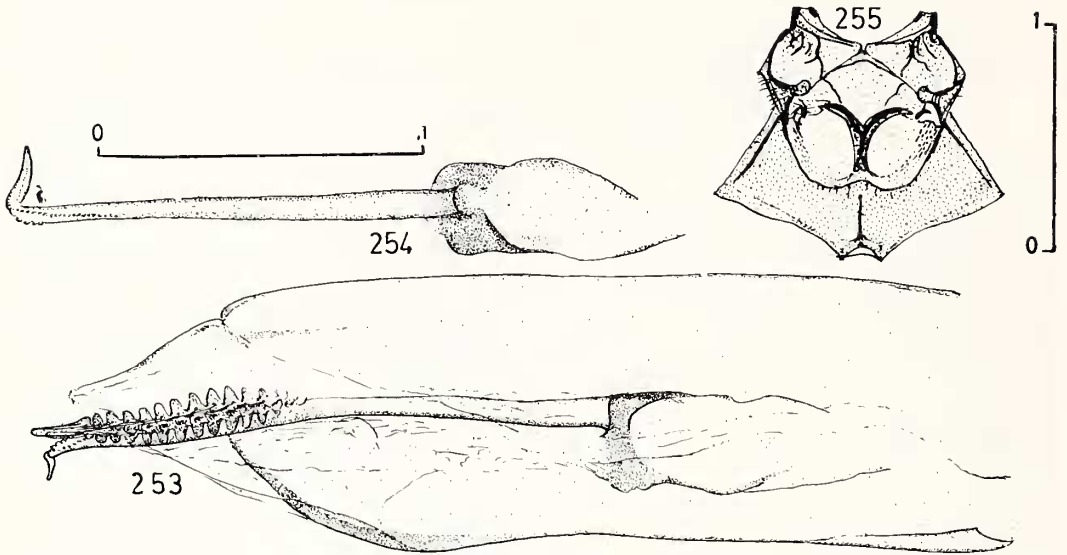
MATERIAL EXAMINED. South Africa: Willowmore [3323AD], 1902, 3 ♂♂, (Dr H. Brauns) (AMSA); Kimberley [2824DB], 5.v.1946, 1 ♂, (R. J. B. Power) (AMSA); Grahamstown,



Figs 247–252. A. (*A.*) *recognitus* Pic. 247: elytron of male. 248: tegmen and connecting membrane with teeth of aedeagus. 249: spiculum gastrale with extra-spicular sclerites of male. 250: aedeagus. 251: last exposed abdominal tergum of female. 252: retracted abdominal segment of male.

Palmiet River [3326BB], 27.vii.1947, 2 ♂♂, (J. C. van Hille) (AMSA); Pluto's Vale [3326DB], 28.iii.1948 and 28.ii.1979, 3 ♂♂, 1 ♀ (J. C. van Hille) (AMSA); Grahamstown, Fort Brown [3326BA], 3.vii.1948, 4 ♀♀, (J. C. van Hille) (AMSA); Grahamstown, Cradock Road [3326BC], in flowers of *Cryophytum angulare*, *Psilocaulon* sp. and *Cryptostemma calendaceum*, 21.iv.1951, 3 ♂♂, 55 ♀♀ (J. C. van Hille) (AMSA); Fort Beaufort, Dan's Hoogte [3226DC], to meloid bait, 19.iii.1970, 28 ♂♂, (J. C. van Hille) (AMSA); Bethulie, Game Park 'Tussen die Riviere' [3025BD], to meloid bait, iv.1979, 16 ♂♂, (J. C. van Hille) (AMSA).

The original description is probably based on female specimens as Pic (1903d) describes the elytra as 'obliquement tronquées au sommet' which does not apply to males where the pointed elytral apex is prominent (Fig. 247). Pic mentions the shoulder macula of the elytron and also that the apical region of the elytron may be vaguely coloured in a similar way. In 1938 Pic described *A. (A.) recognitus* v. nov. *submaculosus* which has the posterior macula. In the collection made in 1951 (Grahamstown, Cradock Road) the three males all have a distinct posterior macula which is absent in the 55 females. When the elytron of the female is seen in transmitted light there is a somewhat lighter area in the apical region which does not show under incident light. In this area the hairs are light. The author has not seen a male where the posterior macula is absent, nor a female where it is distinct. As the occurrence of the posterior macula seems to be a sexual rather than a systematic feature the variety *submaculosus* Pic should fall away.



Figs 253–255. A. (*A.*) *rotundipennis* Pic. 253: aedeagus. 254: median lobe of aedeagus. 255: meso- and meta-thoracic sterna.

Anthicus (Aulacoderus) rotundipennis Pic, Figs 253–255

Anthicus (Aulacoderus) rotundipennis Pic, 1895a: 43

Anthicus (Aulacoderus) subrotundipennis Pic, 1948: 14

Size. Length 1,75 mm (1,60–1,85); width over broadest part of elytra 0,72 mm (0,65–0,80).

Head. Glossy, testaceous to dark testaceous, colour variable; posterior arch broadly round; distinctly punctured, with procumbent hairs. Eyes rather small, bulging.

Prothorax. Glossy, testaceous to dark testaceous, often lighter than head; broader than long, broader than head; shoulders round with two pairs of erect lateral hairs and some more on dorsal surface; punctures as on head with fine recumbent hairs, sparser on posterior quarter; lateral constrictions inconspicuous with few hairs, connected by a basal dorsal transverse groove.

Elytra. Glossy, testaceous to dark testaceous, variable in colour and shape; length over width of elytron varying between 2,38 and 3,26; punctures less dense and recumbent hairs longer than on prothorax; with some erect hairs. Male with small apical point, notch hardly visible.

Wings. Reduced.

Antennae. Not slender; apical four to five segments gradually broader and somewhat darker; last segment one and a half times as long as preceding one.

Legs. Testaceous.

Undersurface. Testaceous to dark testaceous; abdomen darker than thorax; metasternum (Fig. 255) short and broad.

Male abdomen. Aedeagus (Fig. 253); median lobe (Fig. 254) with short apical ventral spine and elongate genital opening with finely beaded margin; proximally sharply widening to

form a dark broader base; connecting membrane with about 15 dorsal teeth; tegmen little sclerotized, basal piece five times as long as apical piece. Retracted segment: tergum semicircular with irregular transverse dark line and more proximal row of fenestrae; sternum consisting of a pair of hardly sclerotized plates, each with an apical hair. Spiculum gastrale short and sturdy with strongly diverging Y-arms. Last exposed sternum with round apex.

MATERIAL EXAMINED. South Africa: Boknes [3326DA], Port Alfred [3326DB], Kleinemonde [3327CA], Mpequeni [3327AD], Christmas Rock [3327BA], at various dates, many specimens, (J. C. van Hille) (AMSA); Sibaya [2732BC], i.1967, 10 ♂♂, (J. C. van Hille) (AMSA).

The author has seen a female type of *A. (A.) subrotundipennis* Pic (1948) (MNHN). It was collected by the author and sent to M. Pic. In the author's collection (AMSA) are a number of specimens belonging to the same series. The author cannot find a difference from *A. (A.) rotundipennis* Pic (1895a) and concludes that the species *A. (A.) subrotundipennis* Pic should be sunk being a synonym.

Anthicus (Aulacoderus) bradfordi **spec. nov.**, figs 256–258

Size. Length 1,76 mm (1,50–1,96); width over broadest part of elytra 0,65 mm (0,52–0,85)

Head (Fig. 258). Highly glossy, black; posterior arch transversely straight with round angles towards eyes; punctures distinct with short semi-procumbent hairs pointing obliquely to median line. Eyes somewhat bulging.

Prothorax (Fig. 258). Glossy, very dark testaceous to black, posterior margin testaceous; broader than long, as broad as head; shoulders round; punctures distinct, but scarce on posterior margin, with recumbent hairs, longer and denser than on head, and with a number of erect hairs; lateral constrictions not very hairy, connected by dorsal transverse groove.

Elytra. Somewhat glossy, black with pale testaceous pair of maculae at apical third; shoulders well developed; with dark recumbent hairs longer than on prothorax but on maculae and on an area in front of middle the hairs are finer and lighter; also a number of erect hairs.

Wings. Fully developed.

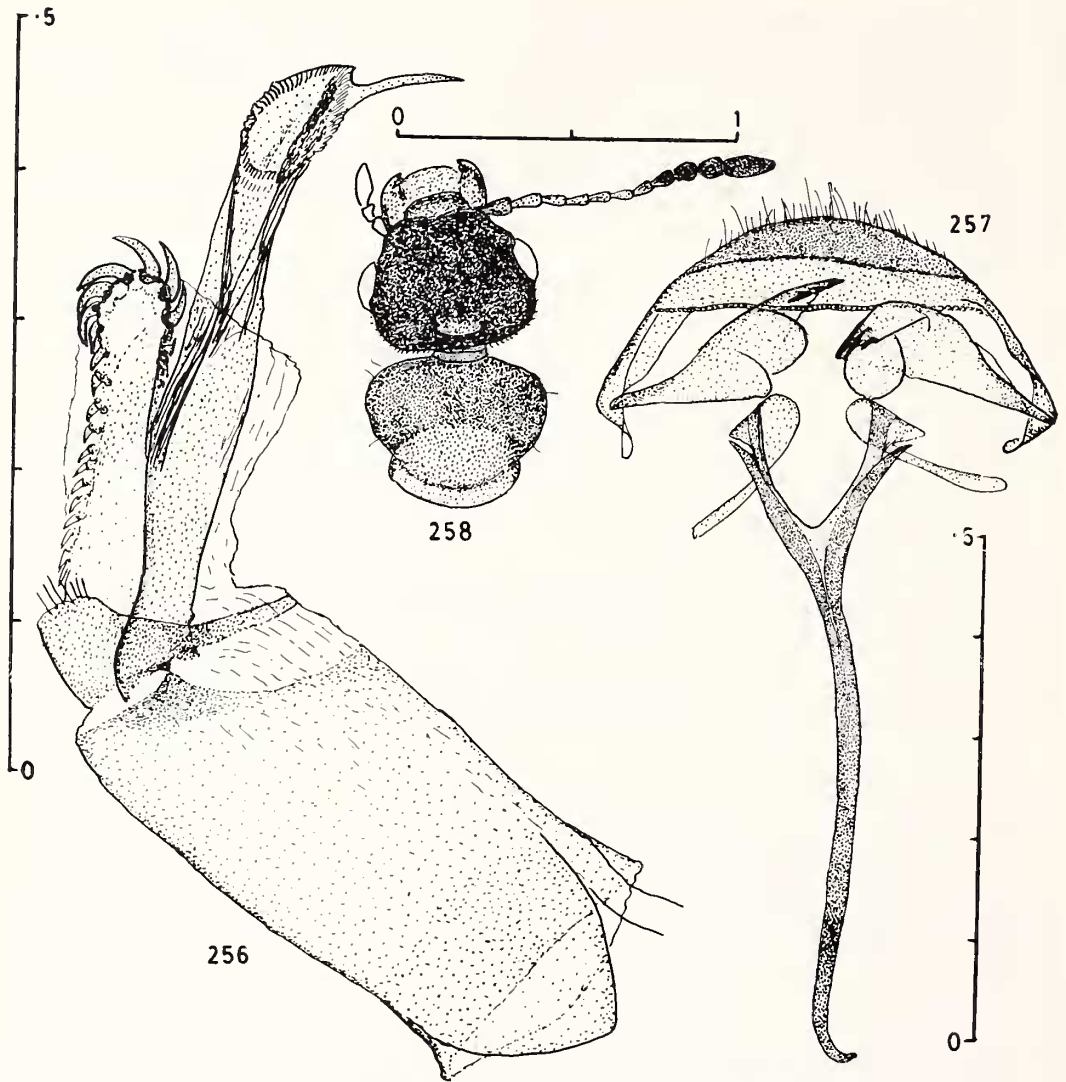
Antennae. Testaceous to dark testaceous; apical 4–5 segments darker, but hardly broader; last segment as long as two preceding ones together (Fig. 258).

Legs. Testaceous; coxae, femora and apical two segments of tarsi dark testaceous.

Undersurface. Dark testaceous to black with recumbent hairs.

Male abdomen. Aedeagus (Fig. 256): median lobe with apical ventral spine and widely open oval genital opening with beaded margin; connecting membrane with dorsal row of 16–19 single teeth; tegmen with basal piece about five times as long as apical piece. Retracted segment (Fig. 257): tergum with proximal row of fenestrae; in some specimens a more distal dark transverse line but in other specimens this is not visible; sternum consisting of a pair of sclerites each ending in three dark points. Spiculum gastrale (Fig. 257): each of the Y-arms shortly forked at apex, the lateral branch thinner and shorter than the median branch; extraspicular sclerites broad at base ending in a narrow elongate strand pointing outwards. Last exposed sternum apically flat or shortly incised.

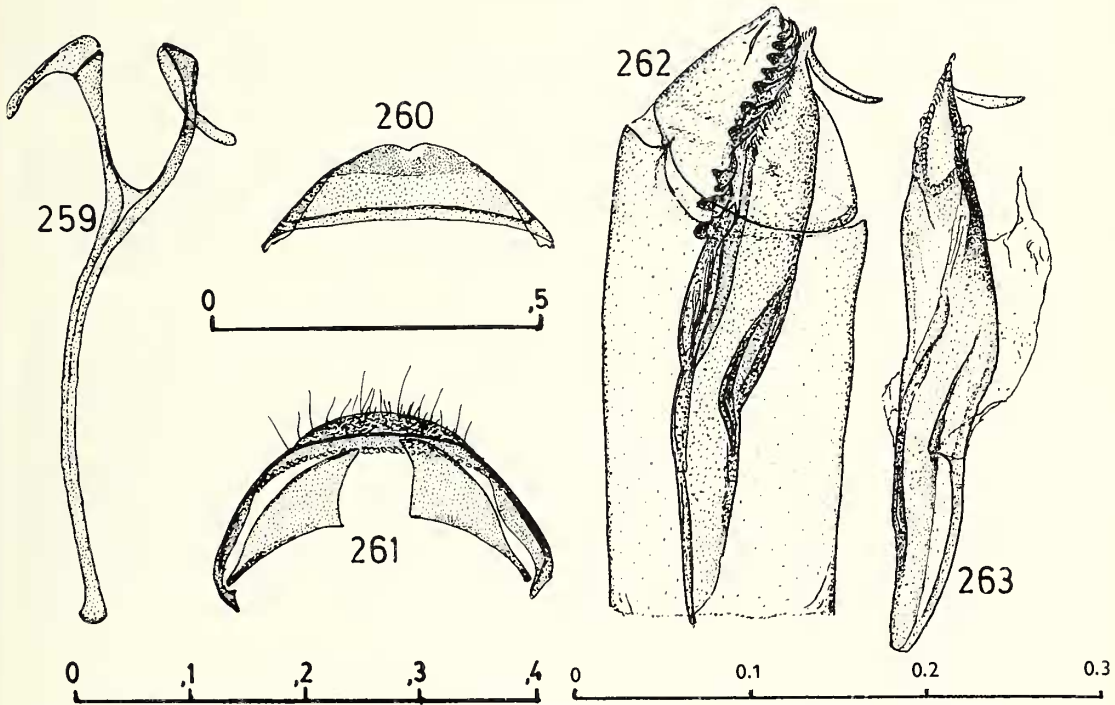
MATERIAL EXAMINED. South Africa: Oudtshoorn [3322CA], 24.ix.1953, Holotype ♂, Paratypes 4 ♂♂, (J. C. van Hille) (AMSA); Kenton on Sea [3326DA], x.1947, Paratypes 2 ♂♂, (B. F. Bradford) (AMSA); Grahamstown, Rhodes University Grounds [3326BC], x.1952, Paratypes 2 ♂♂, (J. C. van Hille) (AMSA); Somerset East [3225DA], x-xi.1935, Paratypes 2 ♂♂, (R. E. Turner) (BMNH); Mossel Bay [3422AA], x.1921 and 2.xii.1938, 2 ♂♂, (R. E. Turner) (BMNH); Kleinemonde [3326DB], i.1954, Paratypes 2 ♂♂, (J. C. van Hille) (AMSA); Knysna [3423AA], 10.ii.1970, Paratypes 2 ♂♂, (J. C. van Hille) (AMSA); Sundays River Mouth [3325DB], 20.ix.1953, to meloid bait, Paratypes 13 ♂♂, (J. C. van Hille,



Figs 256-258 *A. (A.) bradfordi* spec. nov. 256: aedeagus, partly everted. 257: retracted abdominal segment and spiculum gastrale of male. 258: head and prothorax.

(AMSA); Prince Albert [3321DC], 25.ix.1953, Paratypes 2 ♂♂, (J. C. van Hille) (AMSA); The Wilderness [3322DC], 10.ii.1970, Paratype 1 ♂, (J. C. van Hille) (AMSA); Cape Point Nature Reserve [3418AD], 10.xii.1950, 2 ♂♂ (Brinck & Rudebeck) (UEL).

The last two specimens have been described (van Hille 1961) as possible variations of *A. (A.) hanstroemi* van Hille (1961). Thanks to more material it could be decided that they are a separate species.



Figs 259–263. A. (*A.*) *hanstroemi* van Hille. 259: spiculum gastrale with extra-spicular sclerites of male. 260: last exposed abdominal sternum of male. 261: retracted abdominal segment of male. 262: aedeagus. 263: median lobe of aedeagus.

Anthicus (Aulacoderus) hanstroemi van Hille, Figs 259–263

Anthicus (Aulacoderus) hanstroemi van Hille, 1961: 248–249

Size. Length 1,58 mm (1,44–1,70); width over broadest part of elytra 0,65 mm (0,58–0,75).

Head. Glossy, black; posterior arch almost straightly transverse, with rounded angles towards eyes; with distinct punctures with short grey procumbent hairs. Eyes slightly bulging.

Prothorax. Somewhat glossy, dark testaceous but lighter than head; broader than long, as broad as head; shoulders sloping and round; lateral constrictions not prominent, connected by fine transverse dorsal groove; punctures distinct with grey recumbent hairs.

Elytra. Somewhat glossy, dark testaceous; elongate with distinct shoulders; punctures finer than on prothorax with grey recumbent hairs.

Wings. Fully developed.

Antennae. Darkish testaceous, apical 4–5 segments darker and gradually broader; apical segment almost as long as two preceding ones together.

Legs. Testaceous; coxae, femora and two apical tarsal segments darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 262): median lobe (Fig. 263) rather sturdy, with apical ventral spine and oval genital opening with beaded margin; connecting membrane with 10–11

single dorsal teeth; tegmen with basal piece twice as long as apical piece. Retracted segment (Fig. 261): tergum semicircular with round apex, dark transverse subapical line and more proximal transverse row of fenestrae; sternum consisting of pair of broad triangular plates. Spiculum gastrale (Fig. 259) rather short with a pair of slender extra-spicular sclerites. Last exposed sternum (Fig. 260) with small apical indentation.

MATERIAL EXAMINED. South Africa: Cape Point Nature Reserve [3418AD], 10.xii.1950, Holotype ♂, Paratypes 5 ♂♂, 3 ♀♀, (Brinck & Rudebeck) (UEL); Langebaan [3318AA], 31.x.1950, Paratypes 2 ♂♂, (Brinck & Rudebeck) (UEL).

Anthicus (Aulacoderus) bicoloricornis Pic, Figs 264–270

Anthicus (Aulacoderus) bicoloricornis Pic, 1948: 15

Size. Length 1,54 mm (1,45–1,58); width over broadest part of elytra 0,56 mm (0,50–0,60).

Head (Fig. 266). Glossy, reddish testaceous; posterior arch round to broadly round; punctures close with fine procumbent hairs. Eyes rather small, somewhat bulging.

Prothorax (Fig. 226). Glossy, reddish testaceous; broader than long, narrower than head; shoulders sloping and round; punctures distinct, as dense as on head but absent on posterior quarter; with fine recumbent hairs; lateral constrictions with few short hairs, connected by a transverse basal dorsal groove.

Elytra (Fig. 267). Light testaceous to testaceous, rather elongate with distinct round shoulders; punctures less dense than on prothorax, with recumbent hairs and some erect hairs along lateral margins and on apical area.

Wings. Fully developed or reduced.

Antennae (Fig. 266). Slender, testaceous, apical 3–4 segments dark and slightly broader; last segment one and a half times as long as penultimate segment.

Legs. Light testaceous.

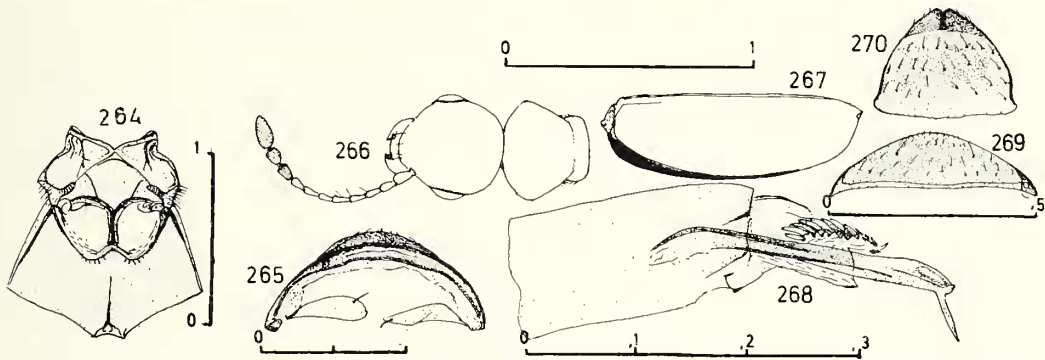
Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 268): median lobe straight; apically pointed, gradually widening to base; with subapical straight ventral spine pointing obliquely and distally; connecting membrane with about 11 single dorsal teeth; tegmen lightly sclerotized, basal piece three times as long as apical piece. Retracted segment (Fig. 265): tergum semi-circular with distinct dark transverse line and more proximal transverse row of fenestrae; sternum consisting of a pair of hardly sclerotized curved plates, each with a single hair. Spiculum gastrale thin, not or hardly pigmented, with short Y-arms. Last exposed sternum (Fig. 269) with bluntly rounded apex.

Female abdomen. Last exposed sternum (Fig. 270) with short apical slit.

MATERIAL EXAMINED. South Africa: Simonstown [3418AB], iv.1915, 2 ♂♂, 3 ♀♀, (Dr M. Cameron) (BMNH); Mossel Bay [3422AA], iv.1921, 2 ♂♂, (R. E. Turner) (BMNH); same locality ii.1922, 10 ♂♂, 2 ♀♀, (R. E. Turner) (BMNH); same locality vii.1924, 1 ♂, (R. E. Turner) (BMNH); same locality vi–vii.1930, 2 ♀♀, (R. E. Turner) (BMNH); same locality viii.1932, 2 ♂♂, (R. E. Turner) (BMNH); Kleinemonde [3326DB], Port Alfred [3326DB], Kasouga [3326DA], Boknes [3326DA], various dates, many specimens, (J. C. van Hille) (AMSA); between Muizenberg and Strand [3418AB], sand dunes 1 mile inland, 3 ♂♂, 1 ♀, (V. B. Whitehead) (AMSA); Cape Town [3318CD], no date, 1 ♂, (A. F. J. Gedye) (BMNH).

The last specimen is labelled '*Aulacoderus boviei* Pic? det. Krekich'. A. (*A.*) *boviei* Pic is described from Zaire. It is unlikely that its distribution should stretch to Cape Town; moreover the species of *Aulacoderus* with a ventral spine on the median lobe are limited to Southern Africa, as far as is known. Krekich is right in doubting his identification.



Figs 264-270. *A. (A.) bicoloricornis* Pic. 264: meso- and metathoracic sterna. 265: retracted abdominal segment of male. 266: head and prothorax. 267: clytron of male. 268: aedeagus. 269: last exposed abdominal sternum of male. 270: last exposed abdominal tergum of female.

This species is easily confused with *A. (A.) rotundipennis* Pic. The two species have an overlapping coastal distribution and are both variable in colour. *A. (A.) bicoloricornis* is usually shorter and narrower and lighter in colour than *A. (A.) rotundipennis*. The aedeagus of the two species is different and in *A. (A.) bicoloricornis* the metathorax (Fig. 264) is longer and narrower than in *A. (A.) rotundipennis* (Fig. 255).

SECTION 8

The species of this section are closely related to those of Section 7, but the ventral spine of the median lobe of the aedeagus is not a simple spike but is either a broader and more shaped structure or it is a more complicated one with sidebranches.

All the species of this section have a coastal habitat. All occur in South Africa except *A. (A.) hendeli* which was collected on the south coast of Tanzania and Kenya. *A. (A.) perlucidus* extends into southern Mozambique.

Key to the species of Section 8

- 1 Ventral spine of median lobe of aedeagus is apically attached and is forked three times (Fig. 271) *dorsalis*
- Ventral spine of median lobe of aedeagus is subapically attached 2
- 2 Ventral spine of median lobe of aedeagus is attached distally to the genital opening 3
- Ventral spine of median lobe of aedeagus is not attached distally to the genital opening 4
- 3 Median lobe of aedeagus with two pairs of distally pointing dorsal spines, one pair at proximal end of the genital opening, the other pair at the distal end; in addition proximal to the genital opening a pair of lateral rows of 10 proximally pointing spines (Fig. 272) *perlucidus*
- Median lobe of aedeagus with a row of about 11 distally pointing spines on either side of genital opening (Fig. 277) *hendeli*
- 4 Median lobe of aedeagus with ventral spine attached opposite the genital opening (Fig. 278) *amplus*
- Median lobe of aedeagus with ventral spine attached proximal to genital opening ... 5
- 5 Median lobe of aedeagus with long proximally pointing ventral spine with a short parallel spine at its base (Fig. 282) *sibayensis*

- Median lobe of aedeagus with complicated branched ventral spine 6
- 6 Connecting membrane of aedeagus with about 40 hardly sclerotized single dorsal teeth (Fig. 286) *bilineatus*
- Connecting membrane of aedeagus with about 28 well sclerotized dorsal teeth of which those nearest the attachment to the tegmen occur in transverse rows of three *albitarsis*

Anthicus (Aulacoderus) dorsalis Laf., Fig. 271

Anthicus (Aulacoderus) dorsalis La Ferté, 1848: 269–270

Size. Length 1,96 mm (1,77–2,27); width over broadest part of elytra 0,81 mm (0,69–0,90).

Head. Somewhat glossy, dark testaceous; posterior arch broadly round; punctures distinct with fine procumbent hairs and a pair of erect lateral hairs half-way between eyes and neck. Eyes hardly bulging.

Prothorax. Hardly glossy, testaceous but lighter at base; shoulders sloping and angular; broader than long, as broad as head; punctures distinct, reduced at base, with fine recumbent hairs; with two pairs of lateral erect hairs; lateral constrictions at $\frac{2}{3}$ of the length of prothorax, with fine short hairs.

Elytra. Mat, lighter than prothorax; with dark transverse band in the middle which in some specimens does not reach lateral margins; less distinct dark markings may occur along median suture at base and apex; punctures distinct, with fine recumbent hairs and a number of longer erect hairs.

Wings. Fully developed.

Antennae. Light testaceous, apical three segments broader and dark testaceous to black; last segment as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Dark testaceous, mesosternum lighter.

Male abdomen. Aedeagus: median lobe (Fig. 271) with branched apical ventral spine, elongated genital opening with beaded margin and proximal to genital opening a paired lateral group of 6–7 closely placed spines; connecting membrane with dorsal row of 17–19 single teeth; tegmen with basal piece three and a half times as long as apical piece. Retracted segment: tergum with transverse dark line and more proximal parallel row of fenestrae, widely

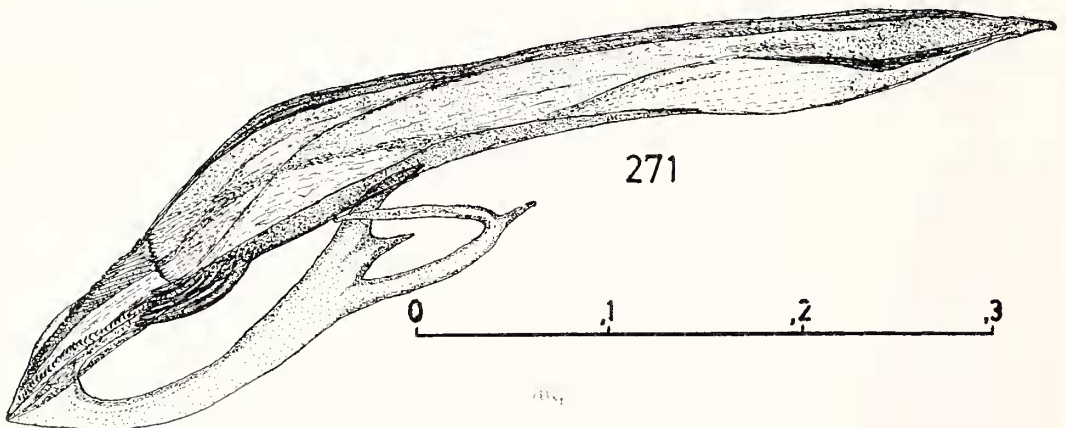


Fig. 271. A. (*A.*) *dorsalis* Laf. 271: median lobe of aedeagus.

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

spaced in median area; sternum consisting of a pair of rather broad plates, well sclerotized along proximal margin. Last exposed sternum with round apex.

MATERIAL EXAMINED. South Africa: Cape of Good Hope, Table Mountain [3318CD], 1906, 1 ♂, Krekich det., (W. Bevins) (NMW); False Bay, 2 miles east of Muizenberg [3418AB], general sweeping, 3.i.1972, 4 ♂♂, 6 ♀♀, (Southern Africa Expedition, British Museum) (BMNH); Kasouga [3326DA], sand dunes, to meloid bait, i.1955, 4 ♂♂, (M. J. A. Cooke) (AMSA); Knysna [3423AA], to meloid bait, 10.ii.1970, 1 ♂, (J. C. van Hille) (AMSA); Swart Vlei [3422BA], to meloid bait, i.1957, 1 ♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) perlucidus van Hille, Figs 272–274

Anthicus (Aulacoderus) perlucidus van Hille, 1971: 371–374

Size. Length 1,9 mm (1,70–2,20); width over broadest part of elytra 0,83 mm (0,78–0,91).

Head. Glossy, light brown; posterior arch semi-circular to eyes, narrowing to mouthparts; with fine punctures and short hairs pointing forwards and outwards.

Prothorax. Glossy, light brown; longer than broad, narrower than head; shoulders angular with two pairs of erect lateral hairs, one pair on shoulder angle, other pair half-way between shoulders and lateral constrictions; punctures more distinct and slightly closer than on head, with fine recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of prothorax, each with an inwards pointing apophysis with spiral markings.

Elytra (Fig. 273). Glossy, transparent, light testaceous with dark transverse band in middle, not reaching lateral margin in most specimens, nor median suture; subapically a second transverse dark band; punctures coarser and less dense and recumbent hairs longer than on prothorax.

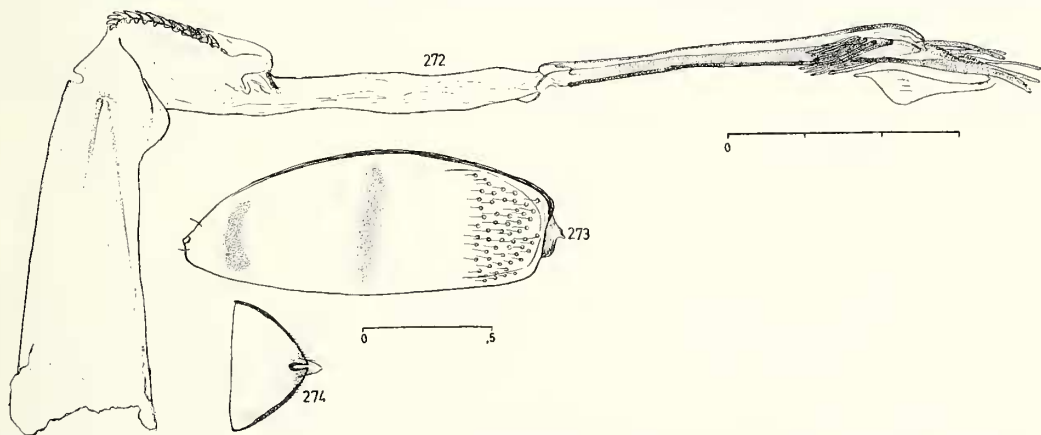
Wings. Fully developed.

Antennae. Light testaceous and slender, apical three segments broader and black; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Light testaceous, abdomen darker.

Male abdomen. Aedeagus (Fig. 272): median lobe slender and straight, with apical point



Figs 272–274. A. (*A.*) *perlucidus* van Hille. 272: aedeagus. 273: elytron of male. 274: last exposed abdominal tergum of female.

and elongate genital opening with beaded margin; a pair of distally pointing spines at distal end of genital opening and a similar pair at proximal end of genital opening; opposite the distal pair of spines is attached the broad ventral spine which points proximally; proximal to genital opening a paired group of ten distally pointing spines; connecting membrane with about 14 single dorsal teeth; tegmen with basal piece 5–6 times as long as apical piece. Retracted segment: tergum rather broad with transverse subapical dark line and parallel row of fenestrae interrupted in the median area. Last exposed sternum slightly flat at apex.

Female abdomen. Last exposed tergum (Fig. 274) with short apical slit.

MATERIAL EXAMINED. South Africa: Sibaya [2732BC], to meloid bait, i.1967, Paratypes 4 ♂♂, (J. C. van Hille) (AMSA); same locality, to meloid bait, vii.1967, Paratypes 287 ♂♂, (M. W. Mansell) (AMSA); Kosi Bay [2632DD], to meloid bait, i.1967, Paratypes 13 ♂♂, (J. C. van Hille) (AMSA); same locality, to meloid bait, vii.1967, Paratypes 221 ♂♂, (M. W. Mansell) (AMSA); same locality, to meloid bait, i.1968, 2 ♂♂, (M. W. Mansell) (AMSA); Boknes [3326DA], to meloid bait, i.1948, 8 ♂♂, (J. C. van Hille) (AMSA); Kleinemonde [3326DB], to meloid bait, 16.iv.1947, 7 ♂♂, (J. C. van Hille) (AMSA); same locality, to meloid bait, i.1954, Paratypes 20 ♂♂, (J. C. van Hille) (AMSA); Gualana River Mouth [3327AD], to meloid bait, i.1952, 6 ♂♂, (J. C. van Hille) (AMSA). Transkei: Dwega Nature Reserve, [3327AD], to meloid bait, 17.ii.1977, 15 ♂♂, (J. C. van Hille) (AMSA). Mozambique: Delagoa Bay, Inhaca Island 2532DD, xii.1954, 1 ♀, (E. McC. Callan) (AMSA).

Anthicus (Aulacoderus) hendeli Pic, Figs 275–277

Anthicus (Aulacoderus) hendeli Pic, 1913a: 379

Size. Length 1,62 mm; width over broadest part of elytra 0,70 mm.

Head. Glossy, testaceous; posterior arch very broadly round, diverging to eyes; punctures distinct with long grey procumbent hairs. Eyes rather small, bulging.

Prothorax. Glossy, testaceous; broader than long, narrower than head; shoulders sloping and angular, with two pairs of long erect lateral hairs, one pair on shoulder angles, the other pair half-way between shoulder and base; punctures closer than on head with grey recumbent hairs, shorter than on head; lateral constrictions at $\frac{2}{3}$ of the length of prothorax; with long hairs and connected by a transverse hairy groove.

Elytra. Glossy, testaceous with incomplete transverse dark band in middle, reaching neither lateral margins nor median suture; a less distinct median dark spot at posterior quarter; punctures more widely spaced than on prothorax with long recumbent hairs and a number of erect hairs, especially along lateral margins.

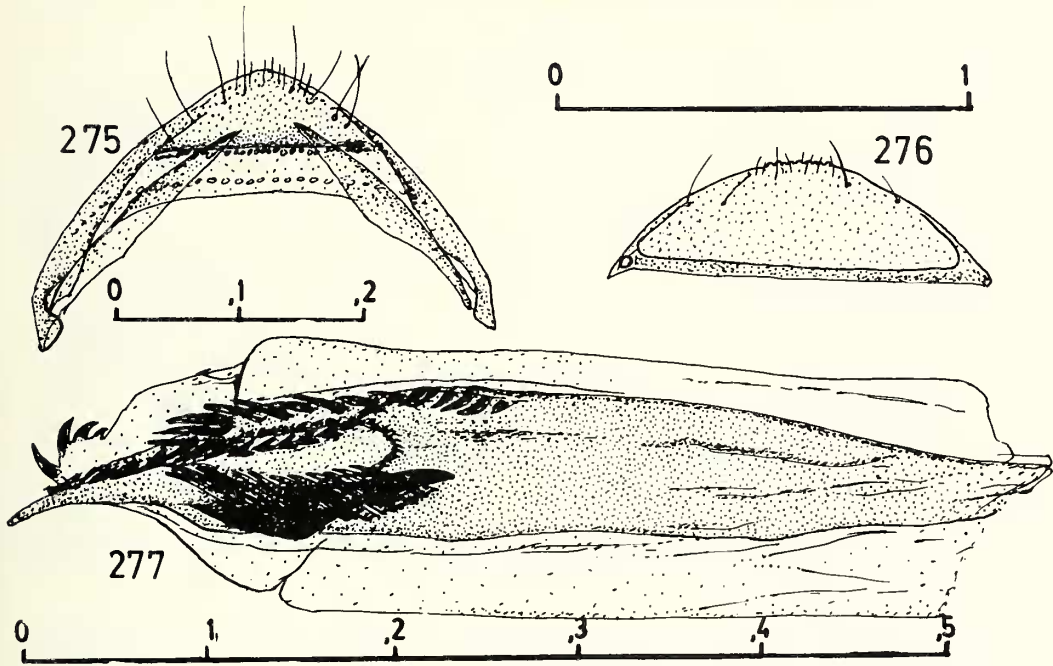
Wings. Fully developed.

Antennae. Testaceous, last three segments broader and darker, but apical half of last segment lighter; last segment almost as long as two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 277): median lobe apically pointed, with large subapical oval genital opening with beaded margin; on each side of genital opening a longitudinal row of about 11 apically pointed spines; with subapical broad proximally pointing spine; connecting membrane with row of about 30 single teeth; tegmen lightly sclerotized, basal piece five times as long as apical piece. Retracted segment (Fig. 275): tergum triangular, apex pointed with several long hairs; with dark transverse subapical line and two transverse rows of fenestrae, those of the proximal row larger than those of the distal row; sternum consisting of a pair of narrow pointed plates. Last exposed sternum (Fig. 275) with blunt apex with finely serrated margin.



Figs 275-277. A. (*A.*) *hendeli* Pic. 275: retracted abdominal segment of male. 276: last exposed abdominal sternum of male. 277: aedeagus.

MATERIAL EXAMINED. Kenya: coast Tiwi to Gaza, xi.1911, Type 1 ♂, (Alluaud & Jeannel) (MNHN).

Type locality is Tanzania. Specimens collected in Kenya are mentioned by Pic (1914). This species is figured on his Plate II, no. 9. The illustration is of a ♀ specimen; it differs from ♂, collected on same expedition by shorter prothorax and rounder shorter elytra. The author has not seen specimens from the Type locality.

Anthicus (Aulacoderus) amplus Pic, Figs 278-281

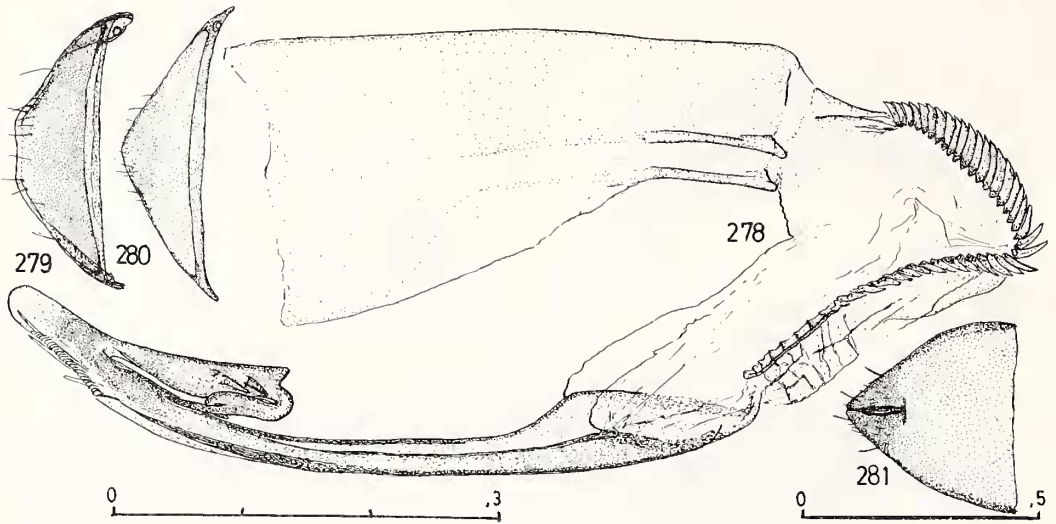
Anthicus (Aulacoderus) amplus Pic, 1895b: 106

Size. Length 2,48 mm (2,25-2,70); width over broadest part of elytra 0,85 mm (0,75-0,93).

Head. Little glossy, dark testaceous; posterior arch round or slightly narrower; distinctly punctured, hairs procumbent. Eyes slightly bulging.

Prothorax. Little glossy, somewhat lighter than head, basal area light testaceous; longer than broad, narrower than head; shoulders round, each with an erect lateral hair; punctures distinct but very fine on posterior area, with recumbent hairs; lateral constrictions at $\frac{2}{3}$ of length of prothorax, with some long lateral hairs, connected by a dorsal transverse depression.

Elytra. Somewhat glossy, dark testaceous with three pairs of more or less distinct lighter areas: (1) lateral shoulder areas; (2) pair of maculae just before the middle; (3) apical or sub-apical area; 1 and 3 may be vague or even not discernable, 2 variable in size and shape; convex with well developed shoulders; punctures with recumbent hairs and a few not very long erect hairs on apical area.



Figs 278-281. *A. (A.) amplus* Pic. 278: aedeagus. 279: last exposed abdominal sternum of male. 280: last exposed abdominal sternum of female. 281: last exposed abdominal tergum of female.

Wings. Fully developed.

Antennae. Testaceous, three apical segments little broader and dark testaceous; last segment almost as long as two preceding ones together.

Legs. Light testaceous, coxae and femora little darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 278): median lobe dorsally convex; with subapical elongate genital opening with beaded margin and a few spines on each side; with complicated curved ventral spine, forked at apex and with some lateral spines; connecting membrane with about 40 single teeth; tegmen with basal piece six times as long as apical piece. Retracted segment: tergum with dark transverse line formed by short longitudinal dark bars lying closely together; in some specimens this is better visible than in others; another dark line closely parallel to apical margin; transverse row of fenestrae along proximal margin, in median area fenestrae are widely spaced; sternum consisting of pair of triangular plates. Last exposed sternum (Fig. 279) with flat apex.

Female abdomen. Last exposed tergum (Fig. 281) triangular with apical narrowly margined groove. Last exposed sternum (Fig. 280) apically pointed.

MATERIAL EXAMINED. South Africa: along the coast from Langebaan [3318AA] to East London [3327BB], various dates, many specimens, (J. C. van Hille) (AMSA).

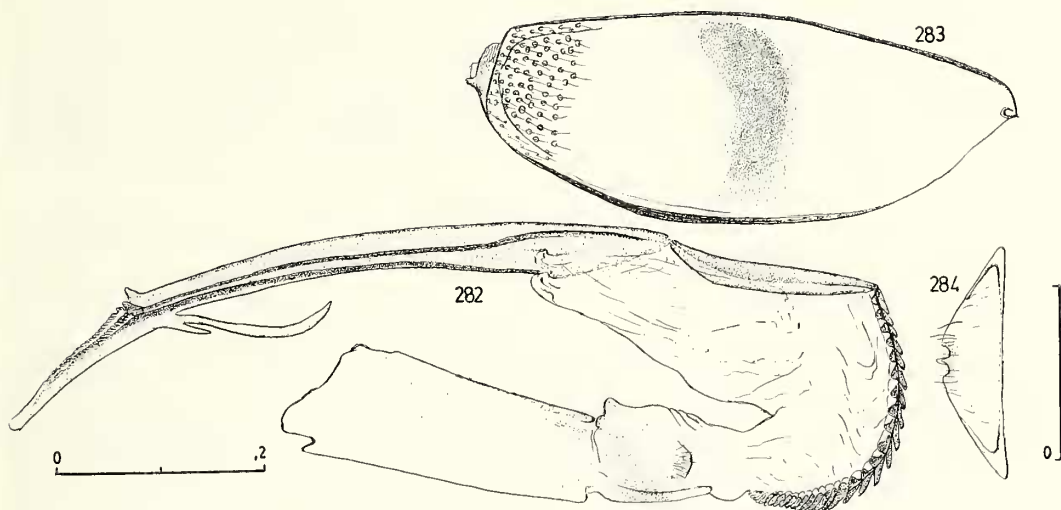
This species resembles *A. (A.) albitarsis*. Both species have a strictly coastal distribution but their areas overlap over a considerable distance; *A. (A.) amplus* extends further west, *A. (A.) albitarsis* further east.

Anthicus (Aulacoderus) sibayensis van Hille, Figs 282-284

Anthicus (Aulacoderus) sibayensis van Hille, 1971, 374-376

Size. Length 1,83 mm (1,61-2,21); width over broadest part of elytra 0,70 mm (0,61-0,83).

Head. Glossy, testaceous; posterior arch longitudinally oval to the eyes, then narrowing to



Figs 282–284. *A. (A.) sibayensis* van Hille. 282: aedeagus. 283: elytron of male. 284: last exposed abdominal sternum of male.

mouthparts; with fine punctures and short procumbent hairs, laterally pointing somewhat outwards. Eyes slightly bulging.

Prothorax. Glossy, lighter than head but in dark specimens same colour as head; longer than broad, narrower than head; shoulders round with lateral pair of erect hairs at greatest width and another pair of erect hairs half-way between shoulders and lateral constrictions; punctures as dense but finer than on head, with recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of prothorax, each with an inwards pointing apophysis with spiral marking; constrictions connected by transverse dorsal depression.

Elytra (Fig. 283). Glossy, testaceous with transverse dark band in middle; punctures coarser but as dense as on prothorax, hairs longer; some longer semi-erect hairs especially along posterior lateral margin.

Wings. Fully developed.

Antennae. Slender, light testaceous, apical three segments broader and black; last segment as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen slightly darker than thorax.

Male abdomen. Aedeagus (Fig. 282): median lobe dorsally slightly convex, with elongate subapical genital opening with beaded margin and two short dorsal points at its proximal end; with ventral proximally pointing spine with two unequal arms, proximal one much longer than distal one; connecting membrane with elongate sclerite between base of median lobe and dorsal row of about 30 single teeth; tegmen: basal piece two and a half times as long as apical piece. Retracted segment: tergum with transverse subapical dark line and parallel row of fenestrae, shortly interrupted in middle; sternum consisting of pair of broad plates. Last exposed sternum (Fig. 284) with small apical point in middle of apical indentation.

MATERIAL EXAMINED. South Africa: Ifafa Beach [3030BC], xii.1947, Paratypes 4 ♂♂, 4 ♀♀, (E. T. M. Reid) (AMSA); Sibaya [2732BC], to meloid bait, i.1967, Holotype ♂, Para-

types 15 ♂♂, (J. C. van Hille) (AMSA); same locality, to meloid bait, i.1968, Paratypes 10 ♂♂, (M. W. Mansell) (AMSA).

This species resembles *A. (A.) perlucidus* in many points but distributions are different although overlapping. Both are strictly coastal. *A. (A.) sibayensis* is adapted to warmer conditions; in Sibaya it is collected only in summer and it is recorded no further south than Ifafa Beach in Natal. *A. (A.) perlucidus* has been collected as far south as the Eastern Cape Province and it occurs in Sibaya in much larger numbers in winter than in summer.

Anthicus (Aulacoderus) bilineatus spec. nov., Figs 285–288

Size. Length 2,37 mm (2,19–2,51); width over broadest part of elytra 0,80 mm (0,70–0,88).

Head (Fig. 287). Glossy, testaceous; posterior arch round; punctures fine with fine white procumbent hairs; a pair of erect lateral hairs behind eyes. Eyes bulging.

Prothorax (Fig. 287). Glossy, testaceous; longer than broad, narrower than head; shoulders sloping and round; punctures very fine with white recumbent hairs; shoulders with long erect lateral hair; lateral constrictions at $\frac{1}{3}$ of the length of prothorax.

Elytra (Fig. 288). Glossy, lighter testaceous than prothorax, two dark transverse bands: (1) behind middle, (2) subapical; in regressively coloured specimens posterior band may be absent; punctures distinct with fine recumbent white hairs, longer than on prothorax; with some longer erect hairs on shoulders and along lateral margin near apex.

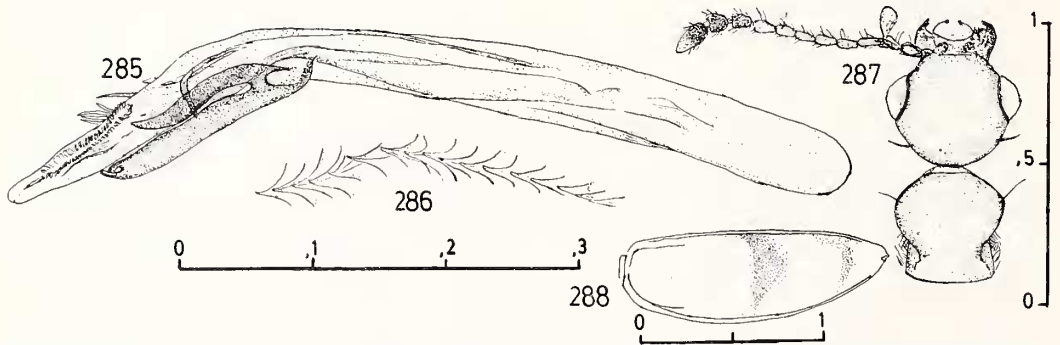
Wings. Fully developed.

Antennae (Fig. 287). Light testaceous, three apical segments broader and darker; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus: median lobe (Fig. 285) well sclerotized with apical elongate genital opening with beaded margin and some thin spines; ventral spine double pronged, attached to apical third; the dorsal prong of the ventral spine lies to the right of the median lobe, ventral prong ends in two curved hooklets; connecting membrane with dorsal row of about 40 single pointed teeth (Fig. 286) which are little sclerotized; tegmen hardly sclerotized, basal piece 3–4 times as long as apical piece. Retracted segment; tergum with transverse dark line and parallel more proximal row of fenestrae which are widely and irregularly arranged; sternum consisting of a pair of very thin narrow plates. Last exposed sternum apically flat or with very shallow apical indentation.



Figs 285–288. *A. (A.) bilineatus* spec. nov. 285: median lobe of aedeagus. 286: dorsal row of teeth of connecting membrane of aedeagus. 287: head and prothorax. 288: elytron of male.

MATERIAL EXAMINED. South Africa: Sedgfield [3422BB], bush beating, 14.xii.1970, Holotype ♂, Paratypes 6 ♂♂, 3 ♀♀, (J. C. van Hille) (AMSA); Heidelberg District, Breede Rivier [3420BD], 6.ii.1932, Paratype 1 ♂, (R. E. Turner) (BMNH); Mossel Bay [3422AA], xii.1924, Paratypes 1♂, 1♀, (R. E. Turner) (BMNH); Nature's Valley [3323DC], 9.ii.1970, Paratypes 14 ♂♂, to meloid bait, (J. C. van Hille) (AMSA); Kasouga [3326DA], bush beating, i.1978, 2 ♂♂, 1 ♀, (J. C. van Hille) (AMSA); same locality, west of lagoon, 29.xii.1977, Paratypes 2 ♂♂, 8 ♀♀, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) albitarsis Laf., Figs 289–298

Anthicus (Aulacoderus) albitarsis La Ferté, 1848, 269

Size. Length 2,34 mm (2,14–2,78); width over broadest part of elytra 0,89 mm (0,81–1,00).

Head (Fig. 294). Little glossy, dark testaceous; posterior arch longitudinally oval; punctures distinct with procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 294). Little glossy, dark testaceous with lighter base; longer than broad, narrower than head; shoulders round; punctures distinct with fine recumbent hairs but on basal area punctures are few; lateral constrictions at $\frac{2}{3}$ of the length of prothorax, shallow with hairs not specially long; with dorsal transverse basal depression.

Elytra (Fig. 295). Somewhat glossy, dark testaceous with two pairs of light maculae, the posterior pair often indistinct or almost absent; not very densely punctured with recumbent hairs and some erect hairs hardly longer than recumbent ones.

Wings. Fully developed.

Antennae (Fig. 292). Light testaceous, apical three segments black and broader; last segment almost as long as two preceding ones together.

Legs. Testaceous to dark testaceous, tarsi lighter.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Figs 289 and 290): median lobe dorsally convex; genital opening subapical with beaded margin; ventral spine attached proximal to genital opening, strongly curved with small transverse pointing spine at point of attachment; connecting membrane with dorsal row of about 28 teeth, the nine teeth nearest the attachment to median lobe single, others in transverse rows of three; tegmen with basal piece four times as long as apical piece; the latter with some lateral apical hairs. Retracted segment (Fig. 293): tergum with slightly pointed apex with some long apical hairs, broad transverse dark line and parallel row of fenestrae; sternum consisting of a pair of squarish plates, connected to tergum by narrow stalk. Last exposed sternum (Fig. 296) apically flat or slightly concave.

Female abdomen. Last exposed tergum (Fig. 298) with V-shaped darkly margined apical groove. Last exposed sternum (Fig. 297) apically excavated with point on either side.

MATERIAL EXAMINED. South Africa: coastal area from Mossel Bay [3422AA] to Ifafa Beach [3030BC] various dates, many specimens (AMSA).

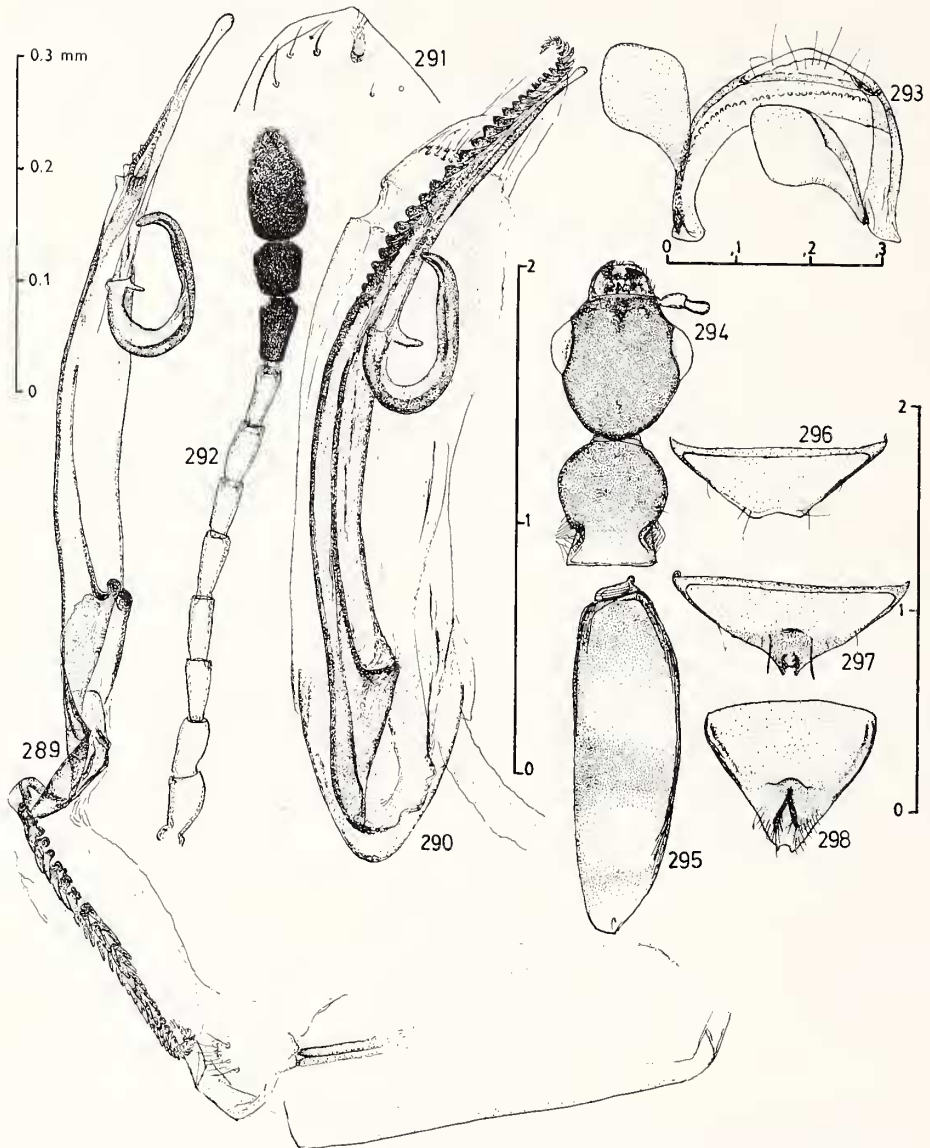
SECTION 9

The two species of this section are characterized by the small and slender aedeagus with connecting membrane without dorsal teeth; the retracted segment of male has a sternum consisting of a structure with two big hooks on each side.

Both species occur in Zimbabwe.

Key to the species of Section 9

- 1 Sternum of retracted abdominal segment of male consists of paired structure with two hooks each, of which the median one is single, the outer one forked (Fig. 301) *marshalli*



Figs 289-298. *A. (A.) albitarsis* Laf. 289: aedeagus. 290: aedeagus inverted. 291: apex of elytron of male. 292: antenna of male. 293: retracted abdominal segment of male. 294: head and prothorax. 295: elytron of male. 296: last exposed abdominal sternum of male. 297: last exposed abdominal sternum of female. 298: last exposed abdominal tergum of female.

— Sternum of retracted abdominal segment of male consists of a hoop with median blunt distally pointing process and two laterally pointing hooks on each side (Fig. 305) *macchleryi*

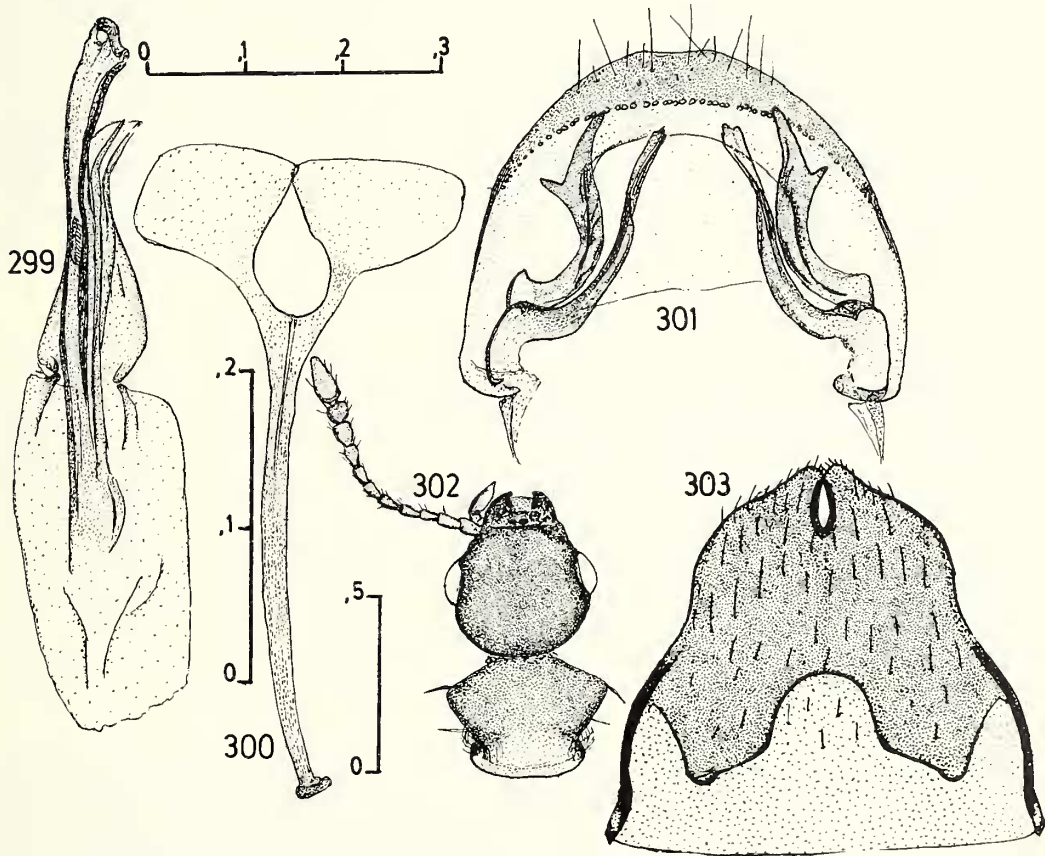
Anthicus (Aulacoderus) marshalli Pic, Figs 299–303

Anthicus (Aulacoderus) marshalli Pic, 1901: 99

Size. Length 1,77 mm (1,72–1,83); width over broadest part of elytra 0,75 mm (0,66–0,81).

Head (Fig. 302). Somewhat glossy, dark testaceous; posterior arch broadly round; with fine punctures and fine procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 302). Slightly glossy, dark testaceous but lighter than head; broader than long, broader than head; with angular shoulders; with two lateral erect hairs on each side; punctures coarser than on head with fine recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of prothorax, with long hairs.



Figs 299–303. A. (*A.*) *marshalli* Pic. 299: aedeagus. 300: spiculum gastrale of male. 301: retracted abdominal segment of male. 302: head and prothorax. 303: last exposed abdominal tergum of female.

Elytra. Dark testaceous with two pairs of light maculae reaching neither lateral margins nor median suture; with fine punctures which along median suture and lateral margins are accompanied by a dark spot, lying behind the puncture; with fine recumbent hairs and some erect hairs.

Wings. Reduced in both sexes.

Antennae. Testaceous, apical 3–4 segments gradually broader but not darker; last segment as long as two preceding ones together.

Legs. Testaceous, coxae and femora darker.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 299) small: median lobe with genital opening situated more than a third of the length of the median lobe from the apex; with a pair of slender parallel sclerites; connecting membrane without row of dorsal teeth; tegmen with basal piece not much longer than apical piece. Retracted segment (Fig. 301): tergum horseshoe-shaped with transverse row of fenestrae; sternum consisting of two hooks on each side of which the outer one has a side hook. Spiculum gastrale (Fig. 300) little sclerotized and pale testaceous with apical arms in the form of thin flat broad plates. Last exposed sternum with small apical indentation.

Female abdomen. Last exposed tergum (Fig. 303) with bilobed apex, the lobes surrounding an elongate oval opening; the greater part of apical region with duplicating ventral flap.

MATERIAL EXAMINED. Rhodesia (now Zimbabwe): Salisbury (now Harare), i.1898, Types 2 ♀♀, (no collector) (MNHN); same locality, xi.1900, 1 ♂, (G. A. K. Marshall) (BMNH); same locality, i.1898, 1 ♀, Pic det., (no collector) (BMNH); same locality, 28.xii.1950, 3 ♂♂, (C. N. Smithers) (AMSA); same locality, 19.i.1957, 3 ♂♂, (R. M. Arnold) (AMSA); same locality, 21.i.1957, 3 ♂♂, 1 ♀, (C. N. Smithers) (AMSA).

Anthicus (Aulacoderus) macchleryi **spec. nov.**, Figs 304–307

Size. Length 2,08 mm (1,87–2,47); width over broadest part of elytra 0,80 mm (0,69–0,88).

Head. Somewhat glossy, testaceous to dark testaceous; posterior arch broadly round; with distinct punctures and fine procumbent hairs. Eyes bulging.

Prothorax. Somewhat glossy, testaceous; broader than long, narrower than head; shoulders sloping and angular; punctures distinct except on posterior area, with fine recumbent hairs and some erect hairs; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, with long whitish hairs.

Elytra (Fig. 307). Light testaceous, but dark at apex and with dark transverse band behind middle, not reaching lateral margins; punctures distinct with fine recumbent hairs; some erect hairs, especially along lateral margins.

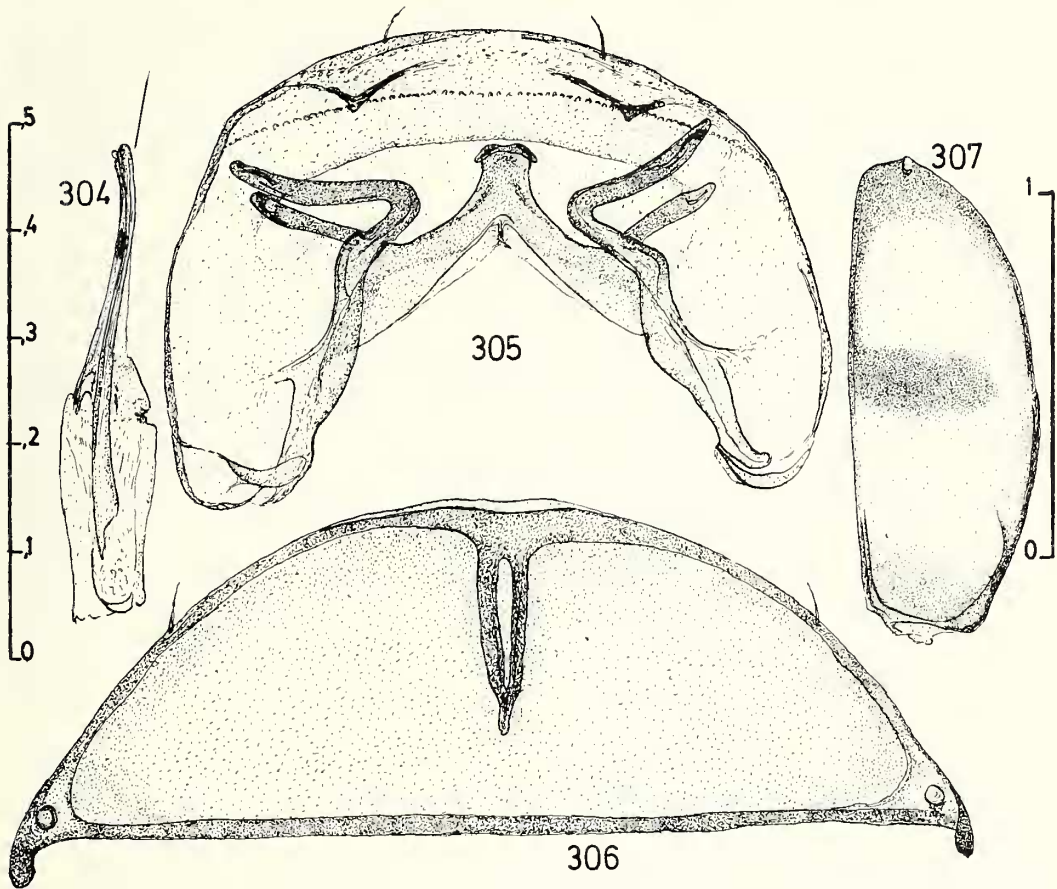
Wings. Fully developed.

Antennae. Light testaceous, apical 3–4 segments darker and broader, but tip of last segment light; last segment slightly longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 304) small: median lobe slender and simple with small genital opening at apical third; connecting membrane without dorsal teeth; tegmen with basal piece three times as long as apical piece. Retracted segment (Fig. 305): tergum round with transverse row of fenestrae; sternum well sclerotized, consisting of a hoop with median blunt distally pointing projection and two laterally pointing spines on each side. Last exposed sternum (Fig. 306) with dorsal median margined groove.



Figs 304–307. *A. (A.) macchleryi* spec. nov. 304: aedeagus. 305: retracted abdominal segment of male. 306: last exposed abdominal sternum of male. 307: elytron of male.

MATERIAL EXAMINED. Rhodesia (now Zimbabwe): Salisbury (now Harare), to meloid bait, i.1955, Holotype ♂, Paratypes 9 ♂♂, (A. McChlery) (AMSA); Salisbury (now Harare), 10.xii.1956, Paratypes 2 ♂♂, (C. N. Smithers) (AMSA); to meloid bait, xii.1970, Paratypes 44 ♂♂, (B. W. Blair) (AMSA).

SECTION 10

The three species in this section are of small size (under two mm), have flat (not convex) elytra and wings are reduced or completely absent. The aedeagus is short and broad with broadly open genital opening; the median lobe is flanked by a pair of strong hooks or several hooks in the case of *A. (A.) fragilis*. The structure of the aedeagus is very different from that of the species in the Albitarsis Group (Sections 1–8). The mode of operation of the aedeagus is not known.

The three species are found in South Africa, in the Cape Province, Natal and the Transvaal.

Key to the species of Section 10

- 1 Last exposed abdominal sternum of male consists of a pair of sclerites each with sub-apical indentation (Fig. 311) *fragilis*
- Last exposed abdominal sternum of male consists of one sclerite with flat apex 2
- 2 Median lobe of aedeagus with median structure distal to genital opening, with a pair of two-faced hooks (Fig. 312) *pedester*
- Median lobe of aedeagus with a pair of 4–5 pointed sclerites proximal to genital opening (Fig. 313) *smithersi*

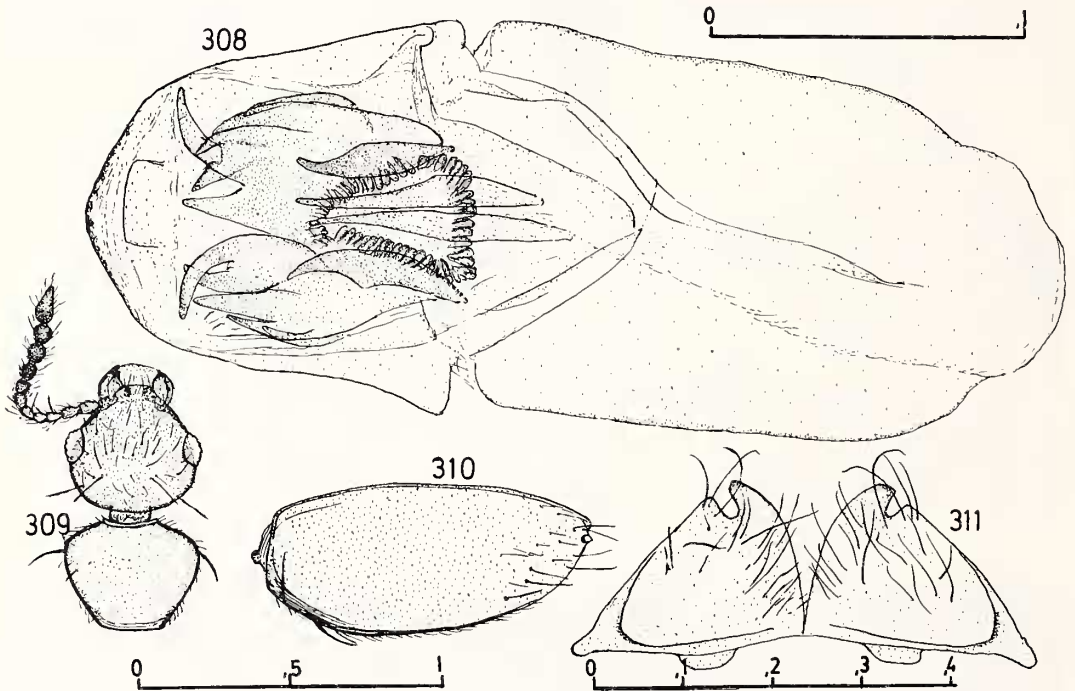
Anthicus (Aulacoderus) fragilis Fähr., Figs 308–311

Anthicus (Aulacoderus) fragilis Fähr., 1870: 335–336

Size. Length 1,62 mm (1,54–1,78); width over broadest part of elytra 0,68 mm (0,55–0,77).

Head (Fig. 309). Glossy, dark testaceous in specimens from Natal and Eastern Cape Province, reddish testaceous in Western Cape Province; posterior arch broadly round; with small punctures with fine procumbent hairs and some larger erect hairs on posterior lateral margin between neck and eyes. Eyes small and bulging.

Prothorax (Fig. 309). Glossy, somewhat lighter than head; broader than long, as broad as head; shoulders round, each with a long erect hair; lateral constrictions indistinct, but the area is hairy; with small punctures and fine recumbent hairs.



Figs 308–311. A. (*A.*) *fragilis* Fähr. 308: aedeagus. 309: head and prothorax. 310: elytron of male. 311: last exposed abdominal sternum of male

Elytra (Fig. 310). Somewhat glossy, light to dark testaceous to black; short and broad; coarsely punctured, with fine recumbent hairs and many erect and semi-erect hairs over whole surface.

Wings. Reduced.

Antennae (Fig. 309). Short, testaceous; apical 4–6 segments somewhat darker in some specimens but in others the difference is slight; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous to dark testaceous.

Male abdomen. Aedeagus (Fig. 308): median lobe short with triangular genital opening with grooved margin, surrounded by about 15 pointed spines of different size and shape; connecting membrane unarmed; tegmen lightly sclerotized, apical piece with round apex, basal piece less than twice as long as apical piece. Retracted segment: tergum lightly sclerotized with transverse row of fenestrae; sternum consists of a pair of narrow plates and in addition there is a transverse slender bar which connects the basal ends of the tergum. Last exposed sternum (Fig. 311) completely divided in right and left half, each with a subapical lateral indentation and with a number of long hairs.

MATERIAL EXAMINED. South Africa: Natal, Kloof [2830DD], 1500 ft., 1 ♂, (R. E. Turner) (BMNH); Van Reenen [2829AD], xi.1926, 2 ♂♂, 3 ♀♀, (R. E. Turner) (BMNH); Cape Peninsula [3418AD], wet leaf litter in gully, 2–3.i.1972, 1 ♂, (Southern African Expedition) (BMNH); Kapland, no date, 1 ♂, with label '*capensis* Pic', (this name was never published), (no collector) (NMW); Grahamstown [3326BC], to meloid bait, x.1952 and iii.1967, 8 ♂♂, (J. C. van Hille) (AMSA); Onrus [3419AC], to meloid bait, ii.1970, 10 ♂♂, (J. C. van Hille) (AMSA); Newlands Cape [3318DC], 101 Kildare Road, to meloid bait, 15.ii.1972, 14 ♂♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) pedester van Hille, Fig. 312

Anthicus (Aulacoderus) pedester van Hille, 1971: 377–378

Size. Length 1,15 mm (1,08–1,26); width over broadest part of elytra 0,44 mm (0,39–0,48).

Head. Glossy, reddish testaceous; posterior arch broad and straight with rounded angles to eyes; as long as broad; with fine punctures and short procumbent hairs. Eyes small, little bulging.

Prothorax. Glossy, light testaceous; broader than long, broader than head; shoulders sloping and round; with fine punctures and short silky recumbent hairs; lateral constrictions inconspicuous, with silky hairs and connected by a dorsal transverse basal groove.

Elytra. Glossy, light testaceous, somewhat transparent; short and broad; very finely punctured, with fine recumbent hairs, slightly longer than on prothorax; in male without apical point, but with shallow opening of elytral gland.

Wings. Completely absent; metatergum little developed.

Antennae. Light testaceous; rather short; distal 4–5 segments moniliform; last segment shorter than two preceding ones together.

Legs. Light testaceous.

Undersurface. Light testaceous; metasternum short, resembling that of *A. (A.) rotundipennis* (Fig. 255).

Male abdomen. Aedeagus (Fig. 312): median lobe with a pair of lateral hooks and a median piece ending in a pair of two faced spines; genital opening triangular with grooved margin; connecting membrane not visible; tegmen membranous, basal piece longer than apical piece.

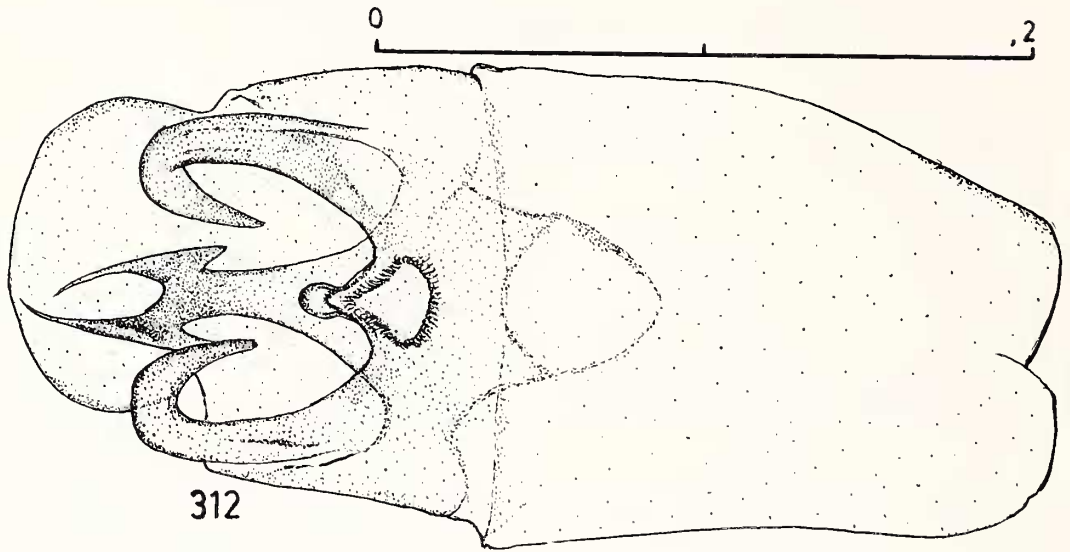


Fig. 312. *A. (A.) pedester* van Hille. 312: aedeagus.

Retracted segment: tergum rather broad with on each side a transverse row of fenestrae which is absent in the middle; sternum consists of a pair of narrow plates. Last exposed sternum with round distal margin, apex slightly flat.

MATERIAL EXAMINED. South Africa: Kosi Bay [2632DD], to meloid bait, i.1967, Holotype ♂, Paratypes 42 ♂♂, (J. C. van Hille) (AMSA).

This small species was collected on a light sandy hill slope under a low palm, *Phoenix reclinata*, about 1 km from the north coast of Lake Nhlange. The specimens occurred together with ants, *Pheidole* sp. of approximately the same colour and size.

Anthicus (Aulacoderus) smithersi **spec. nov.**, Figs 313–316

Size. Length 1,24 mm (1,22–1,25); width over broadest part of elytra 0,42 mm (0,40–0,45).

Head (Fig. 315). Glossy, testaceous; posterior arch transversely almost straight, with round angles towards eyes; with minute punctures and short procumbent hairs. Eyes little bulging.

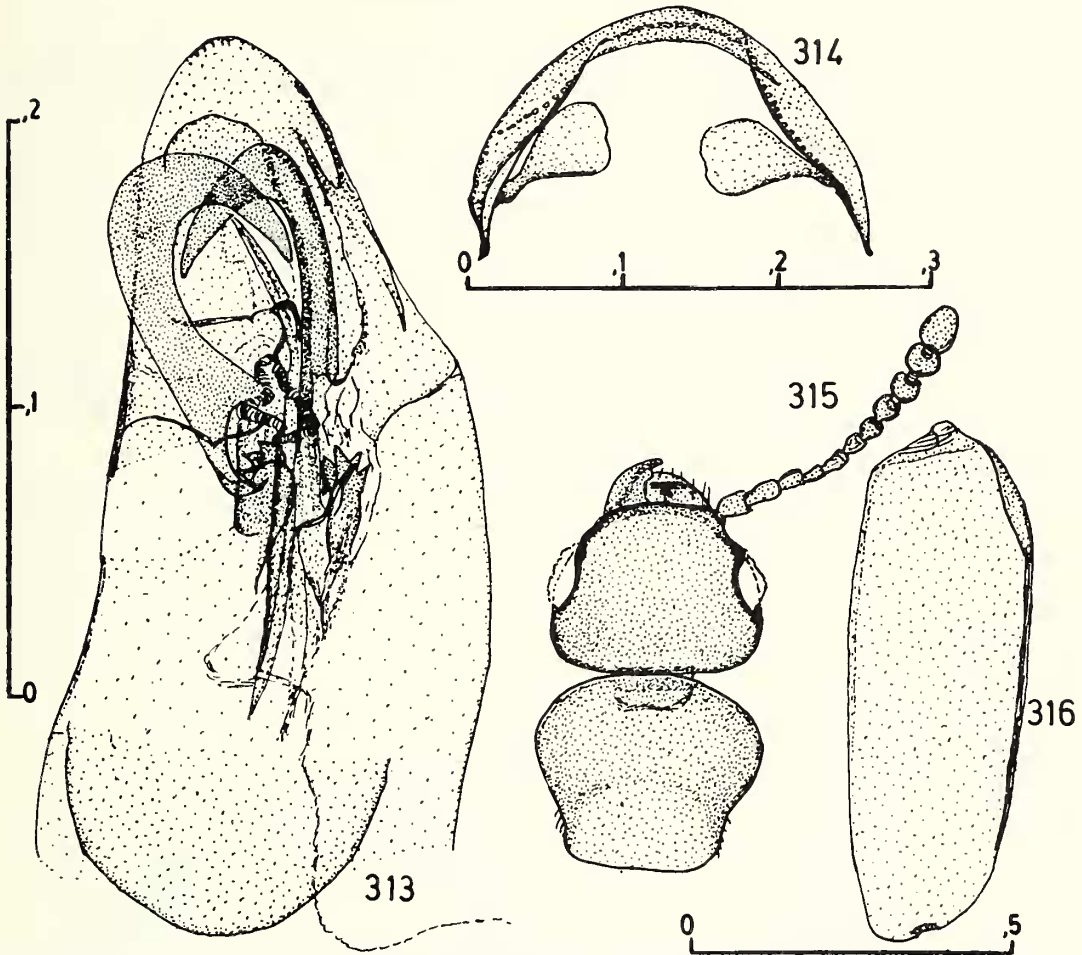
Prothorax (Fig. 315). Glossy, testaceous, slightly lighter than head; shoulders round; punctures minute, hairs short and recumbent; lateral constrictions inconspicuous but with some longer hairs.

Elytra (Fig. 316). Glossy, testaceous, slightly darker than prothorax, same colour as head; flat, with fine punctures and recumbent hairs, longer than on prothorax. In male without apical point but with shallow apical opening of elytral gland.

Wings. Completely absent.

Antennae (Fig. 315). Light testaceous; last 4–5 segments moniliform; last segment shorter than two preceding ones together.

Legs. Light testaceous.



Figs 313-316. A. (*A.*) *smithersi* spec. nov. 313: aedeagus. 314: retracted abdominal segment of male. 315: head and prothorax. 316: clytron of male.

Undersurface. Testaceous, abdominal sterna a little darker than thoracic ones; metasternum short.

Male abdomen. Aedeagus (Fig. 313): median lobe with a pair of large recurved hooks, broadly open genital opening with grooved margin; proximal to genital opening a pair of sclerites each with 4-5 teeth; connecting membrane not visible; tegmen lightly sclerotized, basal and apical pieces of about equal length. Retracted segment (Fig. 314): tergum with lateral row of fenestrae which are absent in median area; sternum consists of a pair of short broad plates. Last exposed sternum with flat apex.

MATERIAL EXAMINED. South Africa: 16 miles west of Pretoria [2527DB], to meloid bait, 26.xii.1952, Holotype ♂, Paratypes 2 ♂♂, (C. N. Smithers) (AMSA).

Section 11

The species *Anthicus (Aulacoderus) josensis* **spec. nov.** has no close relations. The aedeagus is short like that of the species of Section 10, but it has none of the typical features of that section. It has been collected in Nigeria and Zaire.

Anthicus (Aulacoderus) josensis **spec. nov.**, Figs 317–320

Size. Length 2,09 mm (1,85–2,36); width over broadest part of elytra 0,73 mm (0,67–0,89).

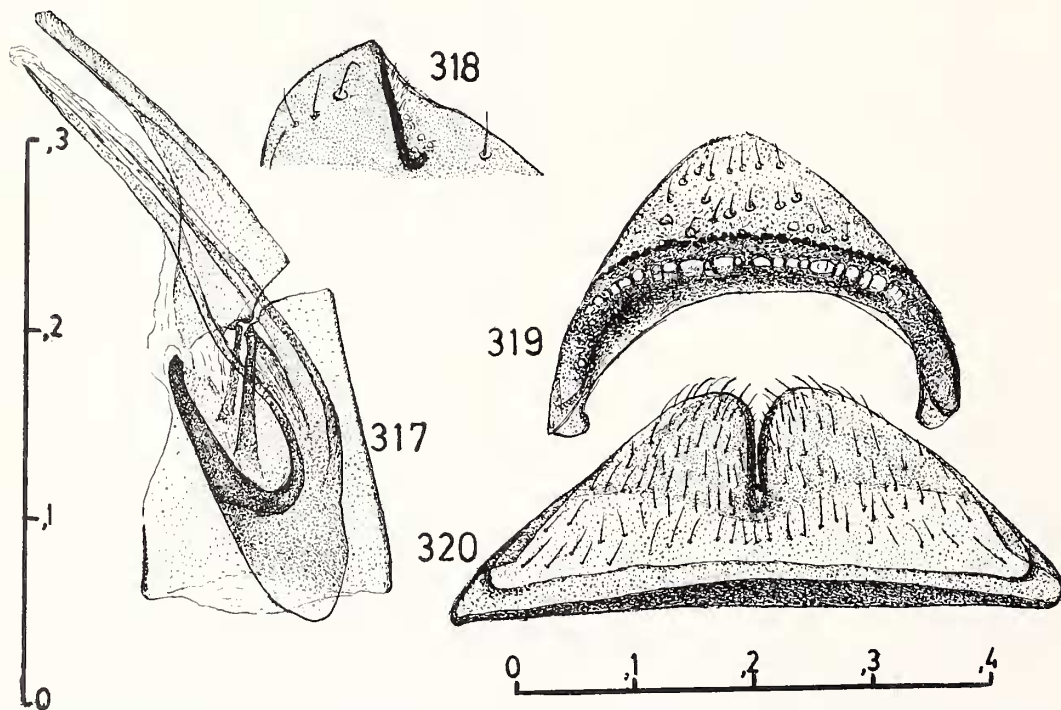
Head. Glossy, black; posterior arch oval to round; punctures fine with fine procumbent hairs. Eyes hardly bulging.

Prothorax. Glossy, black; as long as broad, narrower than head; shoulders round, each with an erect lateral hair; punctures fine, with fine recumbent hairs and a few erect hairs; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, with fine long hairs.

Elytra. Glossy, black, with well developed shoulders; along the median suture and lateral margins punctures are accompanied by a dark spot behind the puncture; in the middle area this spot is not pigmented and at the apex it is apparently absent; hairs recumbent. In male with elongate apical notch (Fig. 318).

Wings. Fully developed.

Antennae. Dark testaceous, apical three segments darker and broader; last segment longer than two preceding ones together.



Figs 317–320. A. (*A.*) *josensis* **spec. nov.** 317: aedeagus. 318: apex of elytron of male. 319: tergum of retracted abdominal segment of male. 320: last exposed abdominal sternum of male.

Legs. Dark testaceous, tarsi somewhat lighter.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 317): median lobe U-shaped with a long pointed dorsal arm and a short, more sclerotized ventral arm; genital opening not clear, probably at apex of dorsal arm; connecting membrane not visible in preparation; tegmen with apical and basal piece of about equal length. Retracted segment: tergum (Fig. 319) broad with blunt apex; with proximal row of rather large fenestrae; distal to this a row of dark spots; sternum consisting of a pair of short and very narrow sclerites. Last exposed sternum (Fig. 320) for more than half its length divided by apical incision.

Female abdomen. Last exposed sternum with small apical point.

MATERIAL EXAMINED. Nigeria: Jos, 20.x.1955, Holotype ♂, Paratypes 1 ♂, 1 ♀, (Expedition Museum Frey, J. Bechyne) (AMSA). Kamerun: Joko, no date, Paratypes 15 specimens, (Heyne) (NMW). Congo (now Zaire): Parc national Garamba II/fd/2, marécage, 28.iii.1951, Paratype 1; II/hd/8, tête de source, 26.ix.1951, Paratype 1, II/fc/4, savane herbeuse, 22.ix.1952, Paratype 1, (Mission H. de Saeger) (MRAC).

SECTION 12

The four species of this section are characterized by the combination of the following features:

- (1) The last abdominal sternum of the male consists of two separate sclerites, attached to each other at the proximal median corner.
- (2) The mesepimerite apophyses are short and broad, without spiral markings (Fig. 3).
- (3) Dorsal to the median lobe of the aedeagus lies a recurved hook which is attached to the connecting membrane (Fig. 334).

The species of this section have been collected in South West Africa, Zaire and Sudan.

Key to the species of Section 12

- | | |
|---|--------------------|
| 1 Sternum of retracted abdominal segment of male consists of a single sclerite (Fig. 325) | <i>maynei</i> |
| — Sternum of retracted abdominal segment of male consists of a pair of separate sclerites | 2 |
| 2 Median lobe of aedeagus with two short apical spines (Fig. 329) | <i>seydeli</i> |
| — Median lobe of aedeagus without apical spines | 3 |
| 3 Median lobe of aedeagus with apical genital opening (Fig. 330) | <i>linnavuorii</i> |
| — Median lobe of aedeagus with subapical genital opening (Fig. 335) | <i>kochi</i> |

Anthicus (Aulacoderus) maynei Pic, Figs 321–325

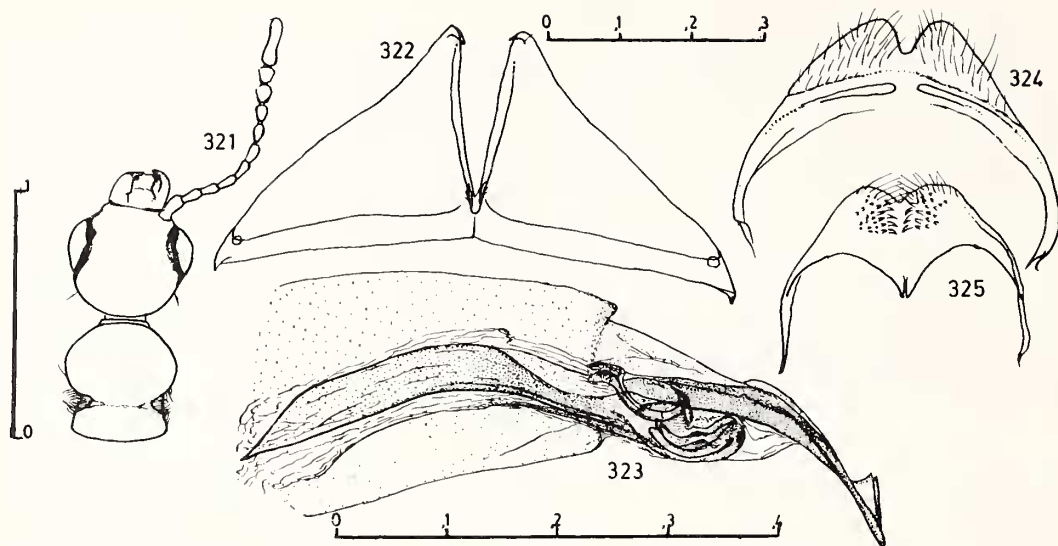
Anthicus (Aulacoderus) maynei Pic, 1913b: 161

Size. Length 2,05 mm (1,80–2,25); width over broadest part of elytra 0,72 mm (0,62–0,80).

Head (Fig. 321). Glossy, testaceous to dark testaceous; posterior arch round; with sparse fine punctures and few procumbent hairs. Eyes darkly margined, somewhat bulging.

Prothorax (Fig. 321). Glossy, grey testaceous, lighter than head; longer than broad, narrower than head; shoulders sloping and round; with fine sparse punctures and recumbent hairs; with distinct lateral constrictions between posterior third and quarter, connected by dorsal transverse groove.

Elytra. Glossy, grey testaceous; somewhat elongate, narrowing to apex; slightly darker



Figs 321–325. *A. (A.) maynei* Pic. 321: head and prothorax. 322: last exposed abdominal sternum of male. 323: aedeagus. 324: tergum of retracted abdominal segment of male. 325: sternum of retracted abdominal segment of male.

along median suture and with a vague darker median area behind the middle, not reaching lateral margins; with rather sparse fine punctures and recumbent hairs, hardly longer than on prothorax.

Wings. Fully developed.

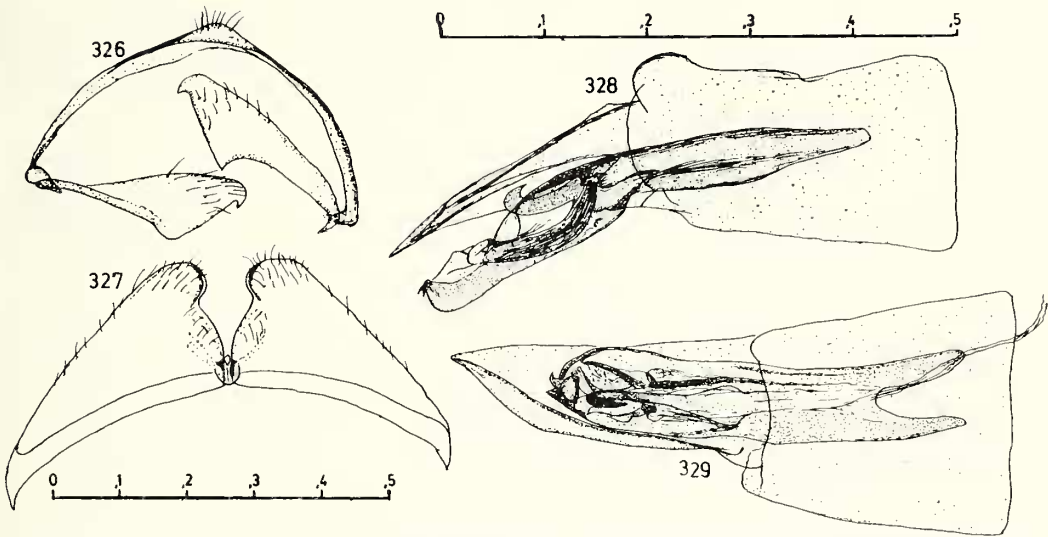
Antennae (Fig. 321). Slender, testaceous, apical four segments somewhat broader; last segment slightly constricted in middle and longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, abdomen a little darker than thorax; mesepimerite apophyses with broad triangular base and with blunt apical knob, pointing forwards.

Male abdomen. Aedeagus (Fig. 323): median lobe with round genital opening with grooved margin; ventral to the median lobe at the level of the genital opening lie a pair of curved bluntly pointed hooks; dorsal to the median lobe lies a single hook which seems to be homologous with the hook found in *A. (A.) kochi* (Fig. 334) and *A. (A.) seydeli* (Fig. 328) which is attached to the connecting membrane; in the present case the hook is relatively smaller; tegmen with apical piece about as long as basal piece; the latter has a pair of apical triangular hooks, pointing dorsally. Retracted segment: tergum (Fig. 324) apically indented; sternum (Fig. 325) consisting of a single plate, apically less deeply indented than tergum and with a number of small hooks on the apical area, pointing to median line. Last exposed sternum (Fig. 322) consisting of two triangular plates, each with an apical hook pointing inwards; the plates are attached to each other at the base.

MATERIAL EXAMINED. Congo (now Zaire): Mayumbé, Kiniati, 7.vi.1911, 1 ♀, (R. Mayné) (MRAC); Mayumbé, N'Tete, vi–viii.1917, 1 ♂, (R. Mayné) (MRAC); Tshela, xi.1920, 1 ♂, (Dr H. Schouteden) (MRAC); Benza-Masola, 12–15.vi.1911, 1 ♀, (R. Mayné) (NMW).



Figs 326-329. *A. (A.) seydeli* Pic. 326: retracted abdominal segment of male. 327: last exposed abdominal sternum of male. 328: aedeagus, side view. 329: aedeagus, ventral view.

Anthicus (Aulacoderus) seydeli Pic, Figs 326-329

Anthicus (Aulacoderus) seydeli Pic, 1952a: 78

Size. Length 2.55 mm (2.13-2.93); width over broadest part of elytra 0.84 mm (0.75-0.95).

Head. Mat, very dark testaceous; posterior arch broadly round; punctures very fine with fine short procumbent hairs. Eyes large and bulging.

Prothorax. Somewhat glossy, testaceous; longer than broad, narrower than head; shoulders sloping and round; with fine punctures and short recumbent hairs; lateral constrictions at $\frac{3}{8}$ of the length of the prothorax, connected by a dorsal transverse groove.

Elytra. Pale testaceous, elongate with well marked shoulders; with anterior narrow dark band covering shoulder region and a triangular dark macula behind the middle, broad at median suture, narrowing towards, but not reaching, lateral margins; the dark markings may be reduced or even be completely absent; punctures fine, recumbent hairs longer than on prothorax.

Wings. Fully developed.

Antennae. Testaceous, last segment sometimes a little darker and longer than the two preceding ones together.

Legs. Pale testaceous.

Undersurface. Testaceous; mesepimerite apophyses broadly triangular with small apical pimple (Fig. 3).

Male abdomen. Aedeagus (Figs 328 and 329): median lobe with short genital opening with grooved margin and with a pair of short apical spines, some grooves, ridges and unclear spines; connecting membrane not showing up in preparation but has a roundly curved bar with pointed apex; a similar structure occurs in *A. (A.) kochi* (Figs 334 and 335). In Fig. 328 the median lobe is everted more in relation to tegmen than in Fig. 329 and the curved bar lags behind in

the eversion more than the median lobe as is also seen in the figs of *A. (A.) kochi*; tegmen with pointed apical piece about as long as basal piece. Retracted segment (Fig. 326): tergum with bluntly pointed apex, narrow; sternum consists of a pair of triangular plates, each with an apical curved hook. Last exposed sternum (Fig. 327) consisting of two separate plates, attached at base.

MATERIAL EXAMINED. Congo (now Zaire): Elizabethville (now Lubumbashi), x-xii.1949, 16 ♂♂, 26 ♀♀, (Ch. Seydel) (AMSA).

Pic (1955) has described *A. (A.) seydeli* var. *semiobliteratus* Pic on specimens collected in x-xi.1950, Elisabethville in which the dark markings are reduced. In the specimens the author has seen, the colour is variable but he cannot divide the specimens into two groups.

Anthicus (Aulacoderus) linnavuorii spec. nov., Figs 330–335

Size. Length 2,19 mm (2,10–2,28); width over broadest part of elytra 0,80 mm (0,75–0,85).

Head (Fig. 333). Glossy, testaceous to dark testaceous; posterior arch broadly round; punctures fine with fine procumbent hairs. Eyes large and somewhat bulging.

Prothorax (Fig. 333). Glossy, testaceous; longer than broad, narrower than head; shoulders round; punctures more distinct than on head with fine recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, well developed with sparse and shortish hairs, not connected by a dorsal transverse groove or depression.

Elytra (Fig. 332). Glossy, light testaceous, somewhat darker over shoulders and with dark transverse band behind the middle, extending backwards along median suture; this band is broader in male than in female in the two specimens examined; elongate, with fine punctures and short fine recumbent hairs.

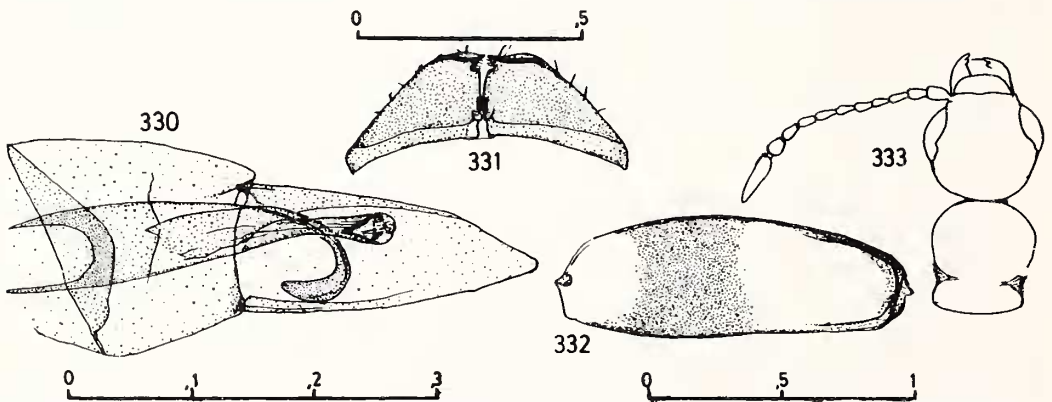
Wings. Fully developed.

Antennae (Fig. 333). Light testaceous; not darker and hardly broader to apex; last segment as long as three preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax; mesepimerite apophyses in the form of a broadly based triangle.

Male abdomen. Aedeagus (Fig. 330): median lobe simple in shape, narrowing to short apical genital opening with beaded margin; connecting membrane not visible in preparation but



Figs 330–333: *A. (A.) linnavuorii* spec. nov. 330: aedeagus. 331: last exposed abdominal sternum of male. 332: elytron of male. 333: head and prothorax.

there is a dorsal curved bar with blunt apex which is probably attached to connecting membrane as in *A. (A.) kochi* (Figs 334 and 335); tegmen: apical piece bluntly pointed, somewhat longer than basal piece. Last exposed sternum (Fig. 331) consisting of two sclerites, connected by a membrane only, each with an apical point pointing inwards.

MATERIAL EXAMINED. Sudan: Equatoria, Mwolo-Mundri, 24.ii.1963, Holotype ♂, Paratype ♀ (R. Linnavuori) (ZEUH).

Anthicus (Aulacoderus) kochi **spec. nov.**, Figs 336–340

Size. Length 3,25 mm (2,74–3,70); width over broadest part of elytra 1,05 mm (1,00–1,22).

Head (Fig. 336). Slightly glossy, testaceous; elongate and narrow; posterior arch round; punctures fine with short procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 336). Slightly glossy, testaceous; longer than broad, narrower than head; shoulders sloping and round; punctures fine with short recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with rather short hairs.

Elytra (Fig. 339). Somewhat glossy, light testaceous with two transverse black bands, the anterior at shoulder area, the posterior behind the middle; punctures bigger than on prothorax and accompanied by a posterior dark spot; recumbent hairs longer than on prothorax.

Wings. Fully developed.

Antennae (Figs 336 and 337). Light testaceous, slender and elongate, not darker nor broader at apex; last segment in male longer than two preceding ones together; in female shorter than two preceding ones together.

Legs. Light testaceous and slender.

Undersurface. Light testaceous; with short and broad mesepimerite apophyses.

Male abdomen. Aedeagus (Figs 334 and 335): median lobe broad with blunt apex, in some specimens with a small pair of lateral 'ears'; genital opening short and broad with grooved margin; distal to genital opening on each side a row of inwards and proximally pointing spines; connecting membrane with dorsal longitudinal bar with recurved apical pointed hook; the base of this bar is attached to distal third of connecting membrane and is about half the length of the median lobe; when eversion takes place the median lobe can move outwards over a distance of twice the length of the connecting membrane but the hooked bar over a distance of twice one third of the length of the connecting membrane (Fig. 334). Tegmen with arrow-shaped apex; apical piece is about equal in length to basal piece. Retracted segment (Fig. 340): tergum narrow with bluntly pointed apex; sternum consists of a pair of narrow plates. Last exposed sternum (Fig. 338) consists of two separate plates each with ornamented apex. The last exposed sternum of the female is one sclerite.

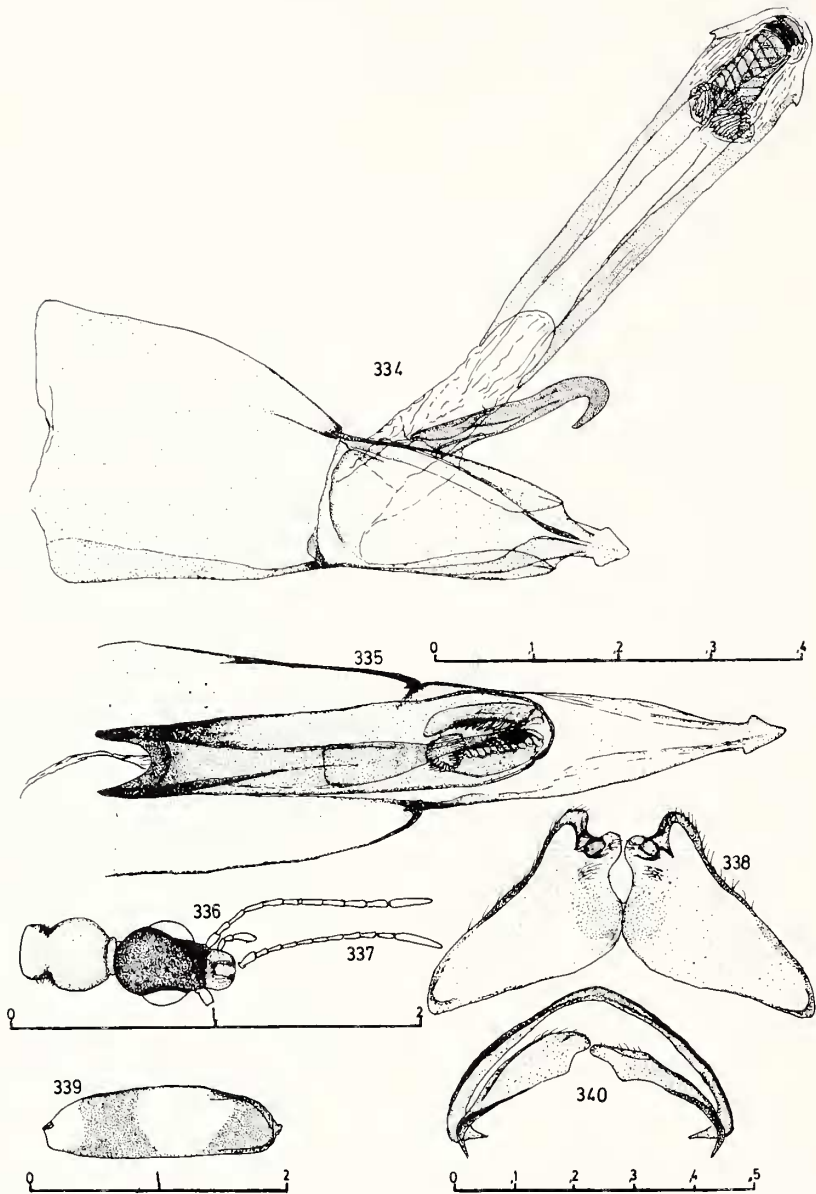
In several specimens the gut is full of pollen.

MATERIAL EXAMINED. South West Africa: Luderitzbucht [2615CA], xi-xii.1949, Holotype ♂, Paratypes 4 ♂♂, 12 ♀♀, (C. Koch) (AMSA); Abachaus, xii.1946, Paratypes 2 ♂♂, 1 ♀, (G. Hobohm) (BMNH). Botswana: Serowe, viii.1982, Paratype ♂, (P. Forchhammer) (AMSA).

Section 13

The aedeagus of the species in this section has a short and little sclerotized median lobe, similar to the median lobe of the species of Section 16. However, only in one of the species is there an indication of a sclerotized longitudinal bar in the median lobe, as is found in the species of Section 16. In the present section the tegmen is complicated and mesepimerite apophyses are present in contrast to conditions in the species of Section 16.

The species of this section are from South West Africa, Angola and Zaire.



Figs 334-340. *A. (A.) kochi* spec. nov. 334: aedeagus, everted. 335: aedeagus, inverted. 336: head and prothorax of female. 337: antenna of male. 338: last exposed abdominal sternum of male. 339: clytron of male. 340: retracted abdominal segment of male.

Key to the species of Section 13

- 1 Last exposed abdominal sternum of male with apical indentation (Fig. 342) . . . *brucoensis*
- Last exposed abdominal sternum of male apically flat, slightly bulging in middle (Figs 347 and 350) 2
- 2 Parameres of tegmen of aedeagus symmetrical (Fig. 345) *nigricolor*
- Parameres of tegmen of aedeagus asymmetrical (Fig. 349) *chaboti*

Anthicus (Aulacoderus) brucoensis spec. nov., Figs 341–344

Size. Length 2,45 mm (2,17–2,56); width over broadest part of elytra 0,85 mm (0,74–0,91).

Head (Fig. 343). Glossy, dark testaceous to black; posterior arch broad; punctures very fine with short fine procumbent hairs. Eyes not much bulging.

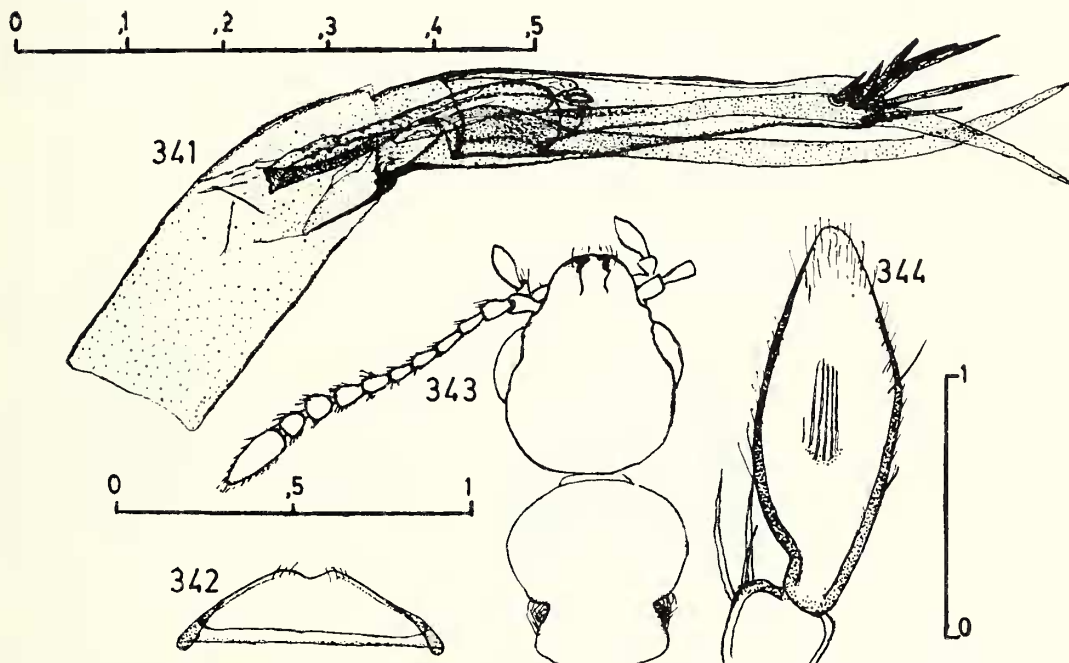
Prothorax (Fig. 343). Glossy, dark testaceous; as long as broad, as broad as head; shoulders sloping and round; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, with long hairs; punctures fine with short recumbent hairs.

Elytra. Glossy, testaceous with two pairs of vague slightly lighter maculae; elongate with round shoulders; punctures larger than on prothorax; no erect or semi-erect hairs were seen.

Wings. Fully developed.

Antennae (Fig. 343). Testaceous, slightly broader at apex but not darker; last segment longer than two preceding ones together.

Legs. Testaceous.



Figs 341–344. A. (*A.*) *brucoensis* spec. nov. 341: aedeagus. 342: last exposed abdominal sternum of male. 343: head and prothorax. 344: last segment of maxillary palp.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 341): median lobe short and membranous with small narrowly oval genital opening with finely beaded margin; with a lightly sclerotized longitudinal bar, its apex is not clear in the preparation; connecting membrane surrounding base of median lobe with small triangular folds and small pustules; tegmen: apical piece with pair of long slightly curved pointed parameres and a slightly shorter lobe with about eight apical spines; basal piece shorter than apical piece. Last exposed sternum with shallow apical indentation (Fig. 342).

MATERIAL EXAMINED. Angola: Bruco, 26.ii–2.iii.1972, Holotype ♂, Paratypes 4 ♂♂, (Southern African Expedition, British Museum) (BMNH). South West Africa (W 37): Otjimbingi Farm 27 miles ESE Kamanjab, 13–15.ii.1972, Paratype ♂, (Southern African Expedition, British Museum) (BMNH).

The Anthicidae have a sense organ on the apical segment of the maxillary palp consisting of a number of parallel grooves. In this species it is well visible (Fig. 344) and consists of 5–6 grooves; its function is not known.

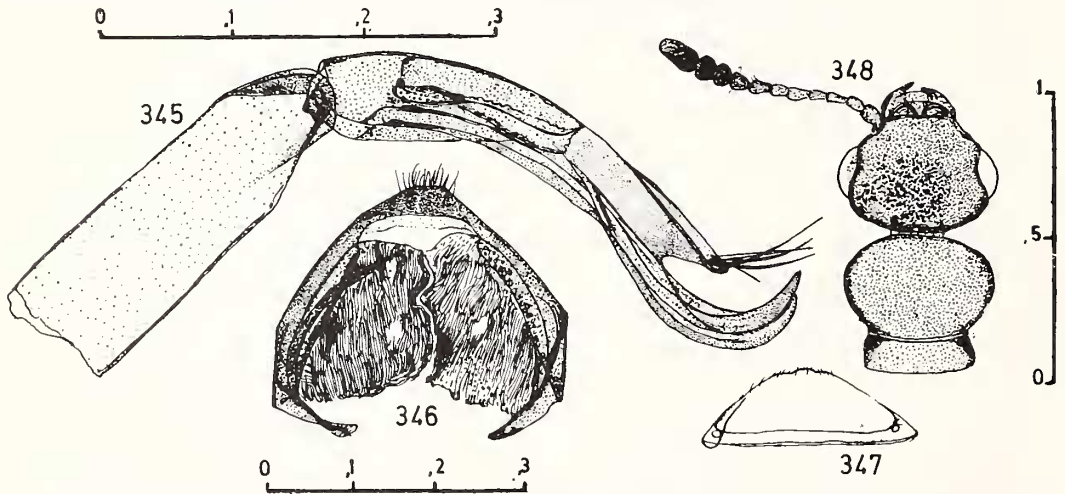
Anthicus (Aulacoderus) nigricolor Pic, Figs 345–348

Anthicus (Aulacoderus) nigricolor Pic, 1952b: 22

Size. Length 2,15 mm; width over broadest part of elytra 0,75 mm.

Head (Fig. 348). Glossy, black; posterior arch broadly round; punctures distinct with fine short hairs, transversely pointing to median line but procumbent on clypeus and labrum. Eyes somewhat bulging.

Prothorax (Fig. 348). Somewhat glossy, black; broader than long, narrower than head; shoulders round; punctures dense with recumbent hairs, longer than on head; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, without long hairs and connected by a dorsal transverse groove.



Figs 345–348. *A. (A.) nigricolor* Pic. 345: aedeagus. 346: retracted abdominal segment of male. 347: last exposed abdominal sternum of male. 348: head and prothorax.

Elytra. Mat, black; punctures fine and dense with recumbent hairs, longer than on prothorax and with some semi-erect hairs; shoulders round.

Wings. Fully developed.

Antennae (Fig. 348). Dark testaceous, apical 4–5 segments darker and broader; last segment as long as two preceding ones together, slightly lighter at apex.

Legs. Dark testaceous to black.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 345): median lobe membranous, genital opening not clear in preparation; connecting membrane with some small pustules round base of median lobe; tegmen: apical piece with a pair of curved parameres and a shorter lobe with some apical hairs; basal piece shorter than apical piece. Retracted segment (Fig. 346): tergum with flat hairy apex; sternum consists of a fibrous plate with a non-fibrous sinuous median line; this plate fills up practically the whole space between the arms of tergum. Last exposed sternum (Fig. 347) apically flat, but slightly bulging in middle.

MATERIAL EXAMINED. Congo (now Zaire): Katanga, Kundelungu, 1 680 m, Bas L. Moëro, A. Luelaba, 1 ♂, Pic det., (no collector) (MRAC). This is the type locality.

Anthicus (Aulacoderus) chaboti Pic, Figs 349–350

Anthicus (Aulacoderus) chaboti Pic, 1921: 343

Size. Length 2,13 mm (2,07–2,20); width over broadest part of elytra 0,86 mm (0,82–0,90).

Head. Glossy, black; posterior arch broadly round; punctures rather coarse with fine short procumbent hairs. Eyes not much bulging.

Prothorax. Hardly glossy, black; slightly broader than long, narrower than head; shoulders round; with close punctures and short recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of the prothorax, without long hairs, connected by a dorsal transverse groove.

Elytra. Somewhat glossy, black; shoulders round; punctures fine with close recumbent hairs, longer than on prothorax; with a few semi-erect hairs, not much longer than recumbent ones.

Wings. Fully developed.

Antennae. Black, rather short; last four segments broader; last segment longer than two preceding ones together.

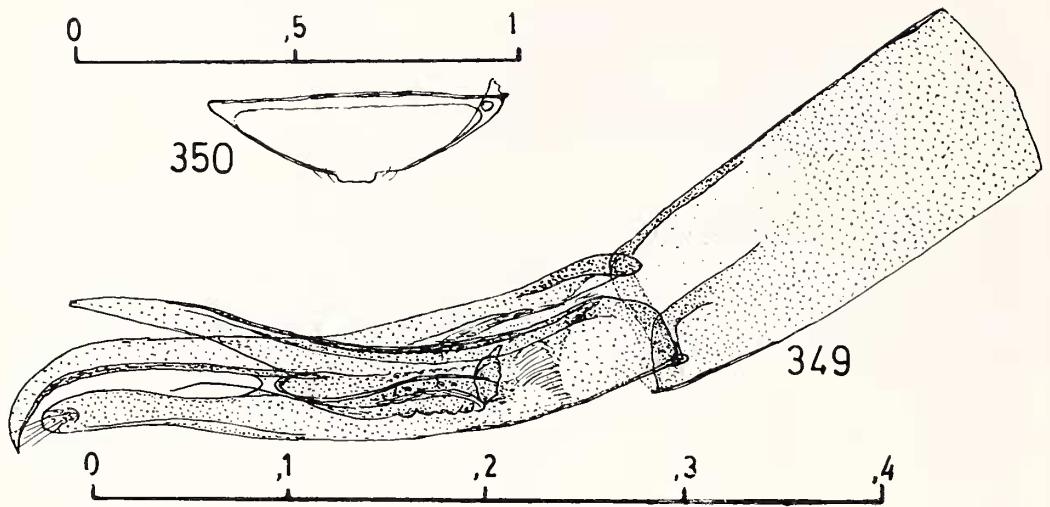
Legs. Black, with tarsi dark testaceous.

Undersurface. Black.

Male abdomen. Aedeagus (Fig. 349): median lobe short and membranous; genital opening not visible in preparation; connecting membrane with fine pustules round base of median lobe; tegmen with apical piece ending in a pair of unequal curved parameres and a median process almost as long as longer paramere, with some apical hairs; basal piece shorter than apical piece. Retracted segment: tergum narrow; sternum consists of a pair of narrow short sclerites. Last exposed sternum (Fig. 350) apically flat but slightly bulging in middle.

MATERIAL EXAMINED. Angola: Benguela, Capelongo-Dongo, xii.1914, 1 ♂, (Mission Rohan Chabot) (MNHN); Angola (A 18), Tundavale, 9 miles NW Sa da Bandeira, general sweeping, 5.iii.1972, 1 ♂, 1 ♀, (Southern African Expedition, British Museum) (BMNH).

The last two species are very similar. The asymmetrical parameres of *A. (A.) chaboti* are not an aberration for both male specimens available show this feature. They also have remarkably different sterna of the retracted abdominal segment of the male.



Figs 349–350. A. (*A.*) *chaboti* Pic. 349: aedeagus. 350: last exposed abdominal sternum of male.

SECTION 14

The most characteristic feature of the two species in this section is the last exposed abdominal sternum of the male, which has a median distally pointing grooved process (Figs 355 and 358); the ventral hook of the median lobe of the aedeagus is also characteristic.

The two species are from the Transvaal, South Africa and Zaire respectively.

Key to the species of Section 14

- 1 Last exposed abdominal sternum of male with median grooved process in semi-circular indentation (Fig. 355) *formicomisternus*
- Last exposed abdominal sternum of male with a pointed process on each side of the median grooved process (Fig. 358) *boviei*

Anthicus (Aulacoderus) formicomisternus **spec. nov.**, Figs 351–354

Size. Length 1,90 mm (1,79–2,13); width over broadest part of elytra 0,79 mm (0,77–0,84).

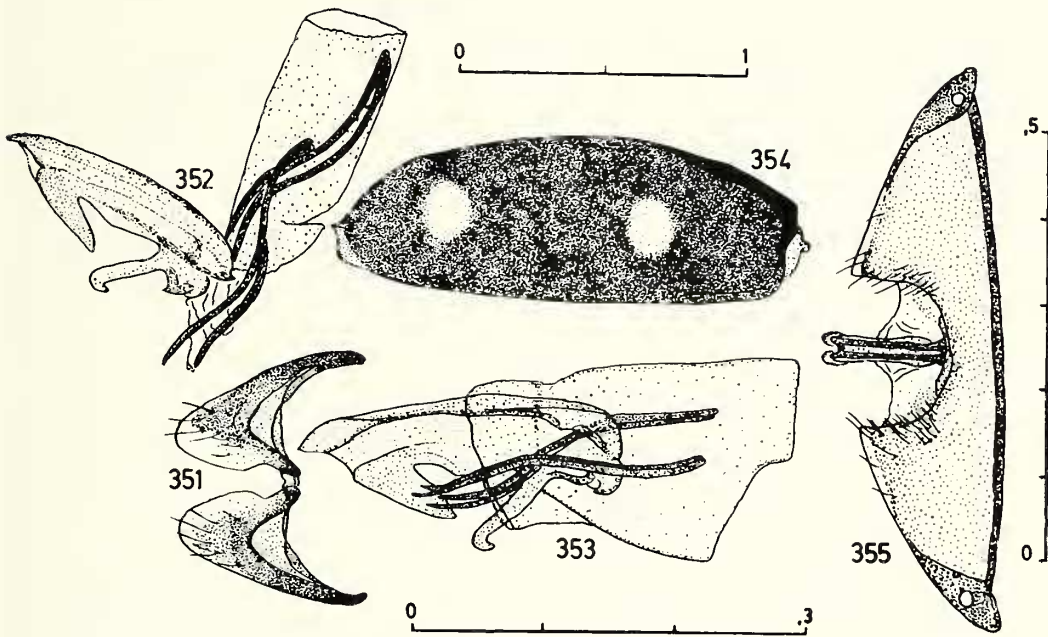
Head. Glossy, black; posterior arch broadly round; with sparse punctures with procumbent hairs. Eyes little bulging.

Prothorax. Glossy, black; broader than long, broader than head; shoulders slightly sloping with somewhat pointed lateral angles; punctures closer than on head, much reduced in posterior region; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, with sharp anterior lateral point and some long hairs.

Elytra (Fig. 354). Glossy, black with two pairs of small light testaceous maculae; punctures accompanied by a posterior dark spot; hairs dark and recumbent but light and shorter on anterior maculae. Males with rectangular apical notch.

Wings. Fully developed.

Antennae. Dark testaceous; apical three segments broader; last segment longer than two preceding ones together.



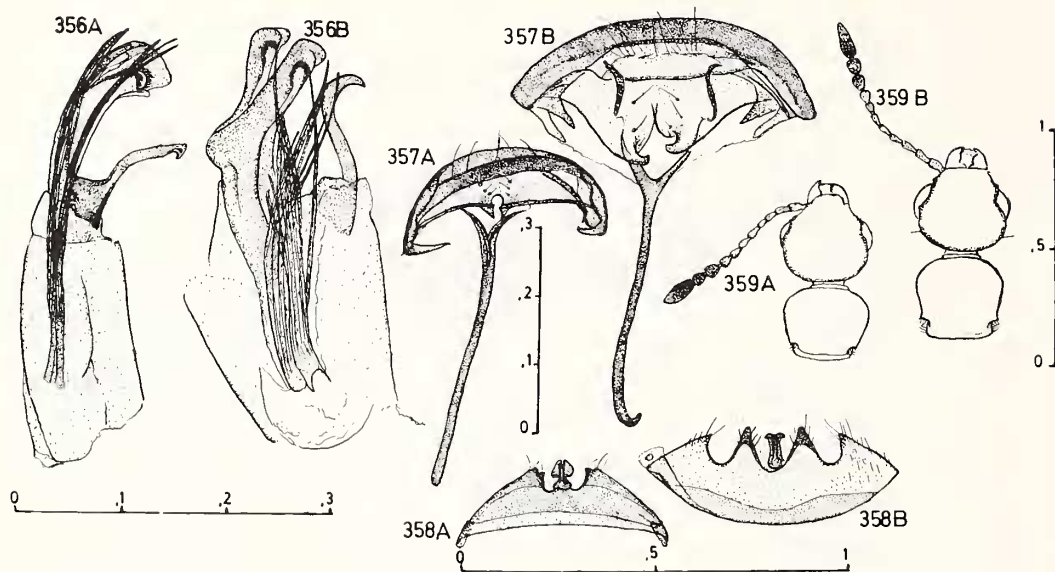
Figs 351–355. *A. (A.) formicomisternus* spec. nov. 351: sternum of retracted abdominal segment of male. 352: aedeagus, everted. 353: aedeagus, inverted. 354: elytron of male. 355: last exposed abdominal sternum of male.

Legs. Dark testaceous, coxae and femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 353): median lobe with pointed dorsal apex and ventral subapical forward pointing hook; another slender ventral hook with recurved apex is attached to base of median lobe; on each side of median lobe some thin elongate bars, inconstant in number; in the five dissected specimens two had two bars on each side, two had two on one side and three on the other side and one specimen had two on one side and one on the other side; Fig. 352 shows an aedeagus that was artificially everted; it shows that the ventral hook is attached to base of median lobe but slender bars are not, for one pair has partly everted with median lobe, but the other pair has not; connecting membrane not visible; tegmen lightly sclerotized, basal piece three times as long as apical piece. Retracted segment: tergum narrow with flat apex with some hairs; with many fenestrae not arranged in a row but forming a diffuse transverse band, without definite pattern; sternum (Fig. 351) consists of a pair of well developed triangular plates. Last exposed sternum (Fig. 355) with large apical semi-circular excavation in which stands a median slender process with dorsal margined groove; this resembles the last exposed sternum of several species of the genus *Formicomus* which also have a median process standing in an excavation but then there is no margined groove.

MATERIAL EXAMINED. South Africa: Rustenburg [2527CA], 8.xii.1953, Holotype ♂, Paratype ♂, (A. L. Capener) (AMSA); Pretoria [2528CA], xii.1951, Paratype ♂. (B. Smit) (AMSA); 16 miles west of Pretoria [2527DB], to meloid bait, 26.xii.1953, Paratypes 15 ♂♂, (C. N. Smithers) (AMSA); Nylsvlei near Nylstroom [2428CB], xii.1979, Paratypes 3 ♂♂, (C. Eardley) (AMSA).



Figs 356–359. A. (A.) *boviei* Pic. (A specimens refer to 'type' specimen; B specimens refer to 'var. prob.' specimen). 356: aedeagus. 357: retracted abdominal segment and spiculum gastrale of male. 358: last exposed abdominal sternum of male. 359: head and prothorax.

Anthicus (Aulacoderus) boviei Pic, Figs 356–359

Anthicus (Aulacoderus) boviei Pic, 1920: 19

Of this species two specimens were available both from Zaire, Lubumbashi (Elisabethville). One specimen is labelled 'Type', the other 'var. prob.', both in Pic's handwriting. Here the 'Type' is described and the peculiarities of the 'var. prob.' are discussed afterwards. Figs of the two specimens are given side by side in Figs 356–359; the A figs refer to the 'Type', the B figs to the 'var. prob.'.

Size. Length 1,55 mm; width over broadest part of elytra 0,68 mm.

Head (Fig. 359A). Glossy, dark testaceous; posterior arch broadly round; punctures fine with fine procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 359A). Glossy, slightly lighter than head, posterior margin lighter; broader than long, narrower than head; shoulders round; punctures fine with fine recumbent hairs; lateral constrictions at $\frac{1}{5}$ of the length of the prothorax, with few short hairs and connected by a fine transverse dorsal groove.

Elytra. Slightly glossy, grey-testaceous; with round shoulders; punctures fine with a dark spot behind each puncture; hairs recumbent, longer than on prothorax; a few semi-erect hairs.

Wings. Fully developed.

Antennae (Fig. 359A). Testaceous; apical three segments somewhat darker and broader; last segment as long as two preceding ones together.

Legs. Testaceous, coxae and femora darker.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 356A): median lobe with large subapical genital opening with grooved margin; with slender ventral hook with subapical round notch and recurved apex;

at base two structures which split into three long spiny hairs as long as median lobe; connecting membrane not clear; tegmen lightly sclerotized, basal piece four times as long as apical piece. Retracted segment (Fig. 357A): tergum broad, not much arched; with dark transverse line and more distal a number of scattered fenestrae; sternum not subdivided, with a pair of small median proximal hooks. Last exposed sternum (Fig. 358A) with apical indentation with on either side a two-pointed lobe and median process with dorsal margined groove.

The specimen labelled 'var. prob.' is larger than the one labelled 'type' and some of its features are more developed than in 'type'.

Size. Length 1,70 mm; width over broadest part of elytra 0,75 mm.

Head (Fig. 359B). Similar to 'type'.

Prothorax (Fig. 359B). Slightly longer than 'type' and with the points in front of lateral constrictions better developed.

Antennae (Fig. 359B). Slightly longer than 'type', otherwise similar.

Legs. Light testaceous, coxae and femora not darker.

Male abdomen. Aedeagus (Fig. 356B): median lobe split in two at apex during preparation, each part with half of the genital opening; ventral hook stronger than in 'type' and without subapical notch; basal structures broader and each has at least eight long spiny hairs; tegmen with basal piece twice as long as apical piece. Retracted segment (Fig. 357B) larger than in 'type' and tergum with row of fenestrae. Spiculum gastrale (Fig. 357B) with a pair of slender extra-spicular sclerites, not visible in 'type'. Last exposed sternum (Fig. 358B) with the lateral double apical points well separated with an indentation between the points.

MATERIAL EXAMINED. Congo (now Zaire): Elisabethville (now Lubumbashi) iv.1912, Type ♂, (Bovie) (MNHN); Elisabethville (now Lubumbashi), date x.1911 is crossed out, 1 ♂, var. prob. Pic *vidit*, (Miss. Agric.) (MNHN).

M. Pic may well be right in supposing that the second specimen is a variety of the first or *vice versa*. It would be interesting to investigate a series of this species, preferably from the type locality, to see whether the two forms are continuous.

SECTION 15

The nine species of this section have the sternum of the retracted abdominal segment of the male developed as a pair of long more or less curved distally pointing spines which articulate with the tergum by means of a separate sclerite. The median lobe of the aedeagus can be extruded from the tegmen by means of the eversion of the connecting membrane (Fig. 390).

The species of this section are very similar with the exception of *A. (A.) pici* **spec. nov.** which, in contrast to the other species, has no lateral constrictions on the prothorax and has teeth on the connecting membrane of the aedeagus, but not in a dorsal row as in Sections 1-8.

This section corresponds to the Martini Group (van Hille 1961).

Species of this section have been collected in South Africa, Zimbabwe, Tanzania, Sudan and South West Africa.

Key to the species of Section 15

- | | | |
|---|--|-------------------|
| 1 | Lateral constrictions of prothorax prominent | 2 |
| — | Lateral constrictions of prothorax absent (Fig. 363) | <i>pici</i> |
| 2 | Last exposed abdominal sternum of male with round apical excavation with median sharp or blunt point (Figs 370, 371 and 379) | 3 |
| — | Last exposed abdominal sternum of male with simple round apical excavation | 5 |
| 3 | Median lobe of aedeagus with pointed apical hooks | 4 |
| — | Median lobe of aedeagus with blunt slightly inwards curved lobe on either side of genital opening (Fig. 366) | <i>orangensis</i> |

- 4 Median lobe of aedeagus with two pairs of pointed apical hooks (Fig. 375) *bomansi*
- Median lobe of aedeagus with one pair of pointed apical hooks (Fig. 376) *citernii*
- 5 Median lobe of aedeagus very slightly sclerotized, almost membranous (Fig. 381) *mitis*
- Median lobe of aedeagus well sclerotized 6
- 6 Median lobe of aedeagus with blunt inwards curved lobe on either side of genital opening (Fig. 385) *denticollis*
- Median lobe of aedeagus not with inwards curved lobes 7
- 7 Median lobe of aedeagus with pair of straight pointed apical lobes (Fig. 389) *martini*
- Median lobe of aedeagus with a pair of blunt lobes 8
- 8 Tergum of retracted abdominal segment of male with flat apex (Fig. 396) *hobohmi*
- Tergum of retracted abdominal segment of male with bluntly pointed apex (Fig. 400) *medleri*

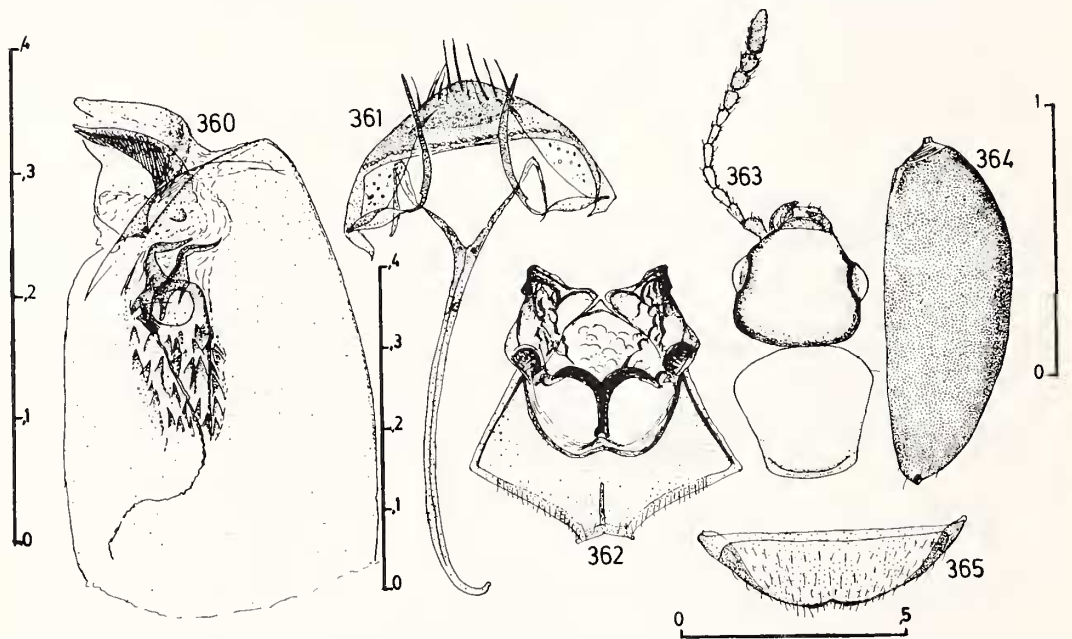
Anthicus (Aulacoderus) pici spec. nov., Figs 360–365

Size. Length 2,25 mm (2,12–2,38); width over broadest part of elytra 0,76 mm (0,70–0,82).

Head (Fig. 363). Glossy, black; posterior arch broad with round angles to eyes; punctures fine with short procumbent hairs. Eyes bulging.

Prothorax (Fig. 363). Glossy, very dark testaceous to black; broader than long, broader than head; shoulders round; punctures closer than on head, especially on the anterior area, with short recumbent hairs; lateral constrictions Absent but base with narrow margin.

Elytra (Fig. 364). Glossy, black; without shoulders; with fine punctures, less close than on



Figs 360–365. *A. (A.) pici* spec. nov. 360: aedeagus. 361: retracted abdominal segment and spiculum gastrale of male. 362: meso- and metathoracic sterna. 363: head and prothorax. 364: elytron of male. 365: last exposed abdominal sternum of male.

prothorax, with fine recumbent hairs longer than on prothorax; male with small apical point and short notch.

Wings. Absent.

Antennae (Fig. 363). Dark testaceous, apical 3–4 segments gradually thicker and slightly darker; last segment as long as two preceding ones together.

Legs. Testaceous, coxae and femora slightly darker.

Undersurface. Dark testaceous, abdomen darker than thorax; each mesepimeron has a round sclerotized swelling with 3–4 integumental ingrowths from top to base (Fig. 362).

Male abdomen. Aedeagus (Fig. 360) short and broad: median lobe with a pair of apical dorsally pointing sclerotized hooks; between the basal struts of these hooks lies a short tube with striated wall ending in genital opening; connecting membrane with a number of soft dark apically pointing teeth, not arranged in a definite pattern; tegmen with long broad basal piece and short apical piece; in the region of apical piece are two finely striated wing-like processes. Retracted segment (Fig. 361): tergum with bluntly pointed apex and transverse row of fenestrae; sternum consists of a pair of distally pointing spines, connected to the base of tergum by a pair of thin narrow plates. Spiculum gastrale (Fig. 361) with long stem and short Y-arms. Last exposed sternum (Fig. 365) with slightly indented apex.

MATERIAL EXAMINED. South West Africa: Okahandja [2116DD], 1.ii.1928, Holotype ♂, Paratype ♀, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) orangensis spec. nov., Figs 366–370

Size. Length 2.27 mm (2.07–2.57); width over broadest part of elytra 0.74 mm (0.67–0.85).

Head (Fig. 369). Not glossy but finely chagrinated, dark testaceous; posterior arch broadly round; punctures very fine with short dark procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 369). Slightly glossy, testaceous, lighter than head; slightly longer than broad, narrower than head; shoulders round; punctures very fine with short recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with some hairy covering but hairs are not very long or numerous.

Elytra (Fig. 368). Elongate, testaceous with dark transverse band behind middle and a less dark apical and shoulder area; the darker pigmentation may extend along median suture and lateral margins so that two pairs of lighter maculae are formed but in many specimens the light areas form transverse bands, especially the anterior one; punctures distinct with recumbent hairs which have the colour of the area on which they are implanted.

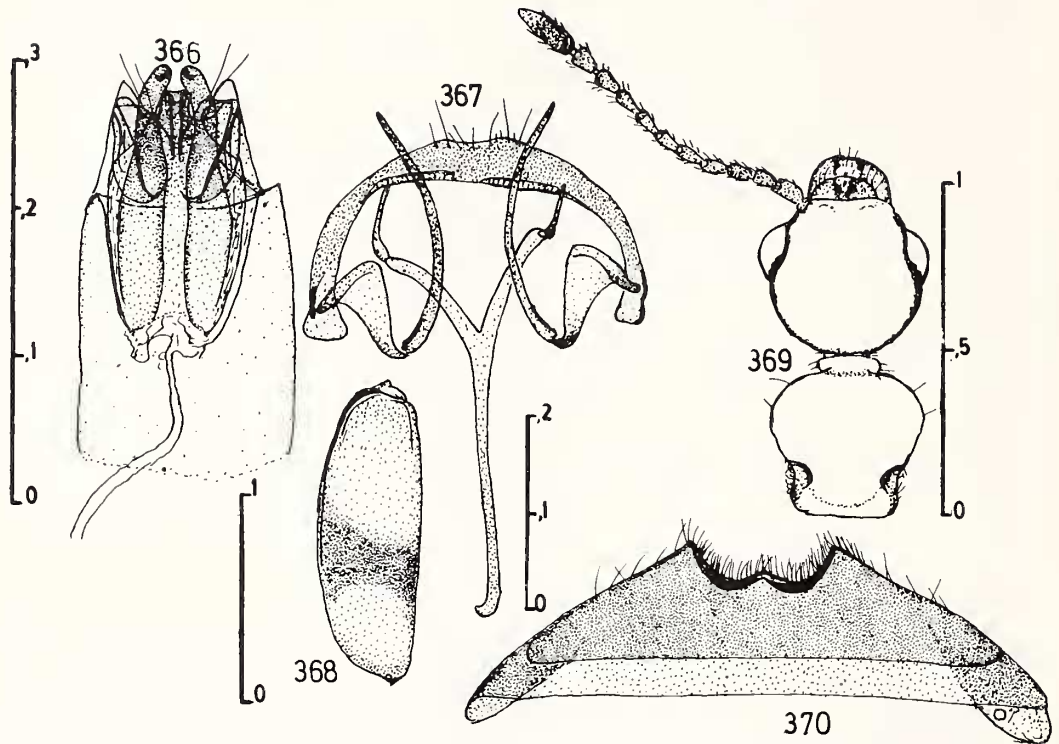
Wings. Fully developed.

Antennae (Fig. 369). Testaceous, only the proximal half of the last segment is darker; apical five segments only slightly broader; last segment slightly longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 366): median lobe with a pair of blunt lobes, somewhat curved inwards at apex; median part with genital opening shorter than these lobes; connecting membrane unarmed; tegmen lightly sclerotized, basal piece more than twice as long as apical piece. Retracted segment (Fig. 367): tergum semi-circular, truncate at apex; row of fenestrae basal and interrupted in middle; sternum consists of pair of triangular plates articulating with a pair of curved distally pointing spines. Last exposed sternum (Fig. 370) with apical hairy indentation with small median point.



Figs 366-370. *A. (A.) orangensis* spec. nov. 366: aedeagus. 367: retracted abdominal segment and spiculum gastrale of male. 369: head and prothorax. 370: last exposed abdominal sternum of male.

MATERIAL EXAMINED. South Africa: Van der Kloof [2924DD], along P. K. le Roux Dam and in nearby Rolfontein Nature Reserve, to meloid bait, xi-xii.1978, Holotype ♂, Paratypes 23 ♂♂, (J. C. van Hille) (AMSA).

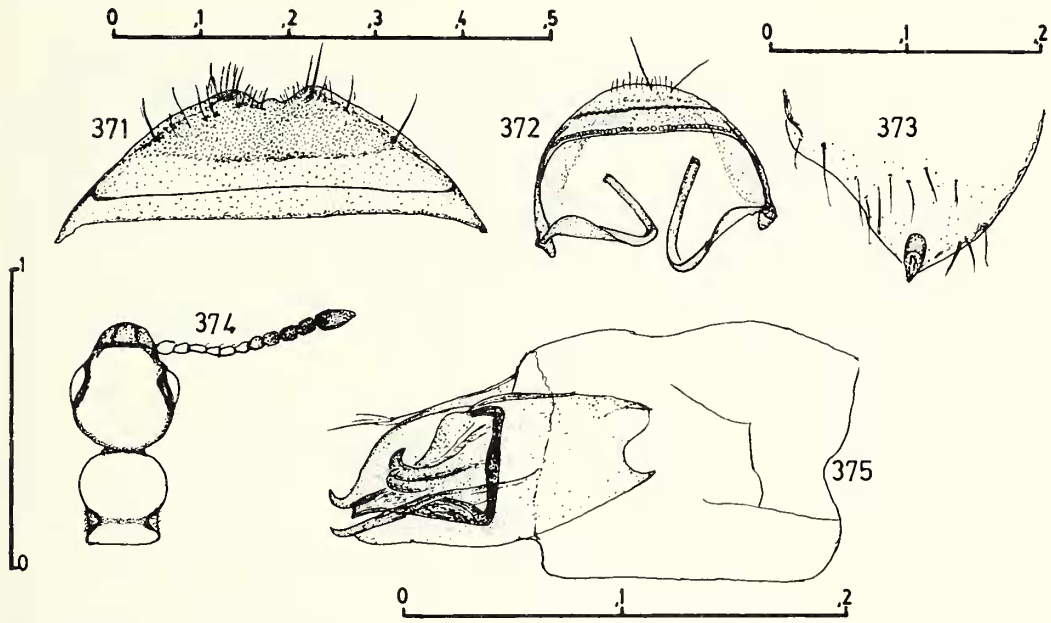
This species was collected together with *A. (A.) martini* but in smaller numbers, about 1:10. The two species are similar in size and shape but *A. (A.) orangensis* is darker.

Anthicus (Aulacoderus) bomansi spec. nov., Figs 371-375

Size. Length 1,75 mm (1,64-1,80); width over broadest part of elytra 0,63 mm (0,60-0,75).

Head (Fig. 374). Glossy, dark testaceous to black; posterior arch broadly round; with fine and well-spaced punctures and fine procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 374). Glossy, same colour as head; longer than broad, narrower than head; shoulders round; with fine punctures and fine silvery-grey recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with short hairs and connected by a shallow dorsal depression.



Figs 371-375. *A. (A.) bomansi* spec. nov. 371: last exposed abdominal sternum of male. 372: retracted abdominal segment of male with tips of spikes of sternum broken off. 373: clytron of male. 374: head and prothorax. 375: aedeagus.

Elytra. Glossy, somewhat lighter than prothorax; elongate and not much sclerotized; with fine punctures and recumbent hairs, longer than on prothorax; in male narrowed to the apical point with notch.

Wings. Fully developed.

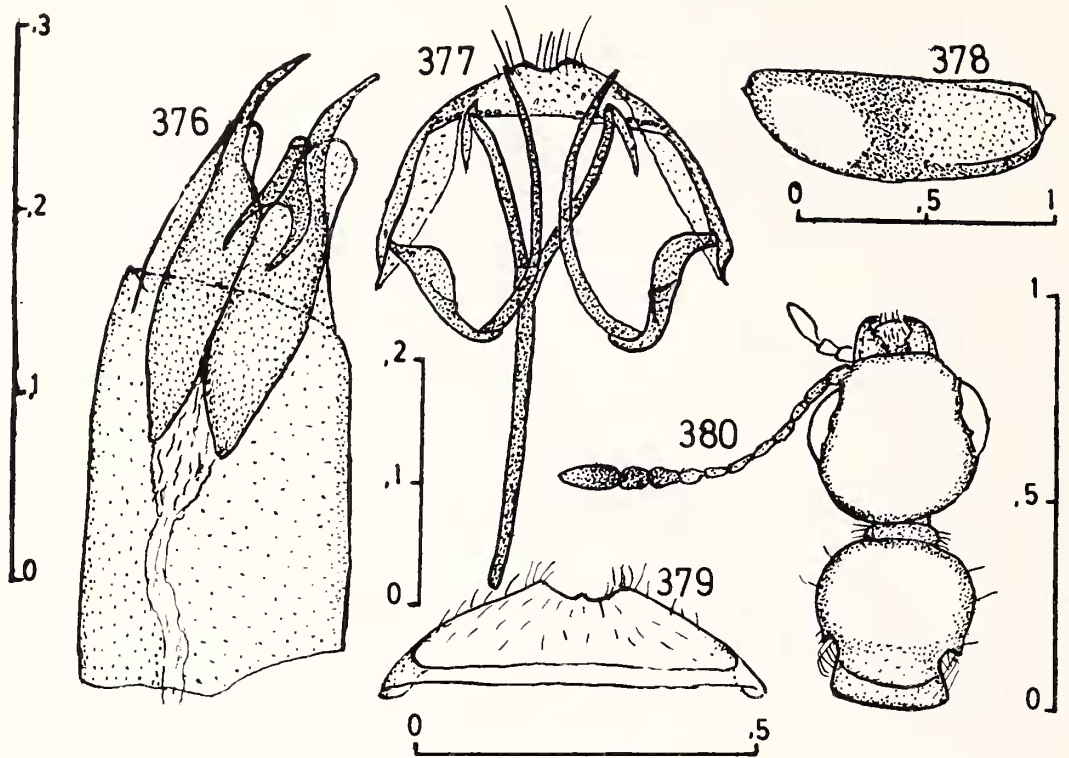
Antennae (Fig. 374). Light testaceous; rather short; apical 4-5 segments somewhat darker and broader; last segment slightly longer than two preceding ones together.

Legs. Light testaceous, femora and tibiae darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 375): median lobe short and broad, with two pairs of recurved hooks ending proximally and distally of the genital opening respectively; connecting membrane unarmed; tegmen: basal piece almost three times as long as apical piece, lightly sclerotized. Retracted segment (Fig. 372): tergum with round apex and proximal row of fenestrae, transverse dark line between apex and row of fenestrae; sternum consists of pair of very narrow triangular sclerites each articulating with distally pointing spine; in the first dissected specimens the points of these spines had broken off and the break had not happened during the preparation; in another dissected specimen the spines were complete and similar to those of *A. (A.) martini* (Fig. 392). Last exposed sternum (Fig. 371) apically excavated with small median prominence.

MATERIAL EXAMINED. Tanganyika (now Tanzania): Moba 780 m, to light, iv.1953, Holotype ♂, Paratypes 5, (N. Bomans) (MRAC).



Figs 376–380. A. (*A.*) *citernii* Pic. 376: aedeagus. 377: retracted abdominal segment and spiculum gastrale of male. 378: elytron of male. 379: last exposed abdominal sternum of male. 380: head and prothorax.

Anthicus (Aulacoderus) citernii Pic, Figs 376–380

Anthicus (Aulacoderus) citernii Pic, 1904: 92

Size. Length 2,26 mm (2,00–2,51); width over broadest part of elytra 0,80 mm (0,72–0,92).

Head (Fig. 380). Glossy, light to dark testaceous; posterior arch somewhat broadly round; punctures minute with fine procumbent hairs. Eyes darkly margined and bulging.

Prothorax (Fig. 380). Lighter than head, with lighter base; longer than broad, narrower than head; collar laterally hairy; shoulders round; punctures fine with short light recumbent hairs; lateral constrictions at $\frac{2}{3}$ of length of prothorax, well supplied with hairs and with a small lateral tooth at the anterior margin.

Elytra (Fig. 378). Glossy, light to dark testaceous with dark transverse band in the middle extending backwards along the median suture almost to apex, leaving a pair of subapical lighter maculae; the apical and shoulder areas are somewhat darker in some specimens but in the regressively coloured specimens the dark markings are reduced and vague; punctures more distinct than on prothorax, with recumbent hairs and some erect or semi-erect hairs.

Wings. Fully developed.

Antennae (Fig. 380). Slender, testaceous, the three apical segments broader and darker

but in some specimens only the last segment is darker; last segment as long as the two preceding ones together.

Legs. Light testaceous, coxae and femora may be darker.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 376): median lobe with round genital opening at the apex of short sclerotized triangular structure, with curved pointed spine on each side of genital opening and a pair of shorter soft lobes with blunt spines; connecting membrane unarmed; tegmen very lightly sclerotized, apical piece has membranous pointed dorsal apex with fine hairs; basal piece twice as long as apical piece. Retracted segment (Fig. 377): tergum lightly sclerotized with flat or slightly indented hairy apex and proximal row of fenestrae interrupted in middle; sternum consists of a pair of narrow triangular plates articulating with a pair of curved distally pointing spikes. Spiculum gastrale Y-shaped and rather short with pair of narrow extraspicular sclerites. Last exposed sternum with apical indentation and small median prominence (Fig. 379).

MATERIAL EXAMINED. Eritrea: Sitet el Eghin, ii.1906, 1 ♂, Pic det., (D. Figini) (MSNG). Kenya: Turkana, partie sud, sables 800–1 000 m, 1 ♀, (Mission de l'Omo 1932–1933, Arambourg, Chappuis et Jeannel) (MNHN). Sudan: Ed Damer, Hulelba, 8.iii.1962, 1 ♀, Bonadona det., (R. Remane) (ZSBM); Govt. Lubia, Mang Prov., at night from sheet, 8.i.1934, 1 ♂, (Miss M. Steele) (BMNH).

The last specimen is labelled '*sulcicollis* Pic??, det. R. F. Heberdey'. *A. (Aulacoderus) sulcicollis* Pic (1895c) is described from Iran and Afghanistan. The author has only seen a female Type of this species from Afghanistan (MNHN). It seems to the author that this specimen has a broader head, more sloping shoulders and lateral constrictions closer to the base of the prothorax than the specimens of *A. (A.) citernii*. Its colour is rather dark but falls within the range of colour variations of the *A. (A.) citernii* specimens. The localities of the two species are far apart and on the whole the species of this section have small areas of distribution. Only a male specimen from the type locality of *A. (A.) sulcicollis* would allow a conclusion whether these two names are synonyms.

Anthicus (Aulacoderus) mitis **spec. nov.**, Figs 381–384

Size. Length 2,05 mm; width over broadest part of elytra 0,75 mm.

Head. Glossy, dark testaceous; posterior arch round; punctures fine with fine procumbent hairs. Eyes with dark margin, hardly bulging.

Prothorax. Glossy, slightly lighter than head; longer than broad, narrower than head; shoulders round; with very fine and sparse punctures with fine recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with short hairs.

Elytra. Glossy, lighter than prothorax with two pairs of vague maculae, the anterior pair on anterior half, the posterior pair near apex; shoulders not prominent; punctures coarser and hairs longer than on prothorax.

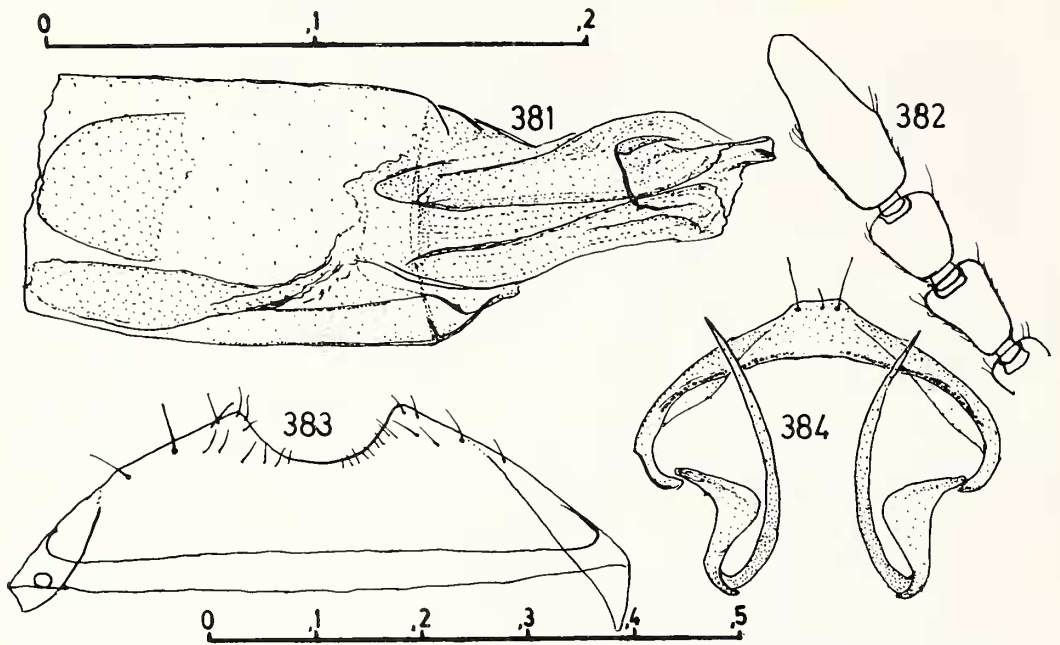
Wings. Full size but very flimsy.

Antennae. Light testaceous, slightly broader and darker at apex; last segment (Fig. 382) with somewhat angular outline and slightly longer than two preceding ones together.

Legs. Light testaceous, distal half of femora slightly darker.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 381): median lobe short and membranous; genital opening terminal without lateral lobes or hooks; connecting membrane unarmed; tegmen with basal piece more than twice as long as apical piece. Retracted segment (Fig. 384): tergum narrow, with row of fenestrae interrupted in middle; sternum consisting of pair of triangular plates with distally pointing spikes. Last exposed sternum (Fig. 383) with broad semi-circular indentation.



Figs 381-384. A. (*A.*) *mitis* spec. nov. 381: aedeagus. 382: apex of antenna. 383: last exposed abdominal sternum of male. 384: retracted abdominal segment of male.

MATERIAL EXAMINED. South Africa: Matjesfontein [3330BA], 1-18.xii.1928, Holotype ♂, (R. E. Turner) (BMNH).

Anthicus (Aulacoderus) denticollis spec. nov., Figs 385-388

Size. Length 2.24 mm (1.87-2.60); width over broadest part of elytra 0.83 mm (0.78-0.87).

Head (Fig. 387). Moderately glossy, testaceous; ovoid in shape; posterior arch broadly round; punctures fine and sparse with very fine procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 387). Glossy testaceous; longer than broad, narrower than head; round in front; with fine punctures with very fine recumbent hairs and a few erect hairs; lateral constrictions at $\frac{3}{5}$ of the length of the prothorax, with sharp tooth in front of constrictions; constrictions with fine long hairs.

Elytra (Fig. 388). With two light areas alternating with three darker areas of which the middle one is darkest; punctures fine but darkly marked on dark areas; hairs recumbent.

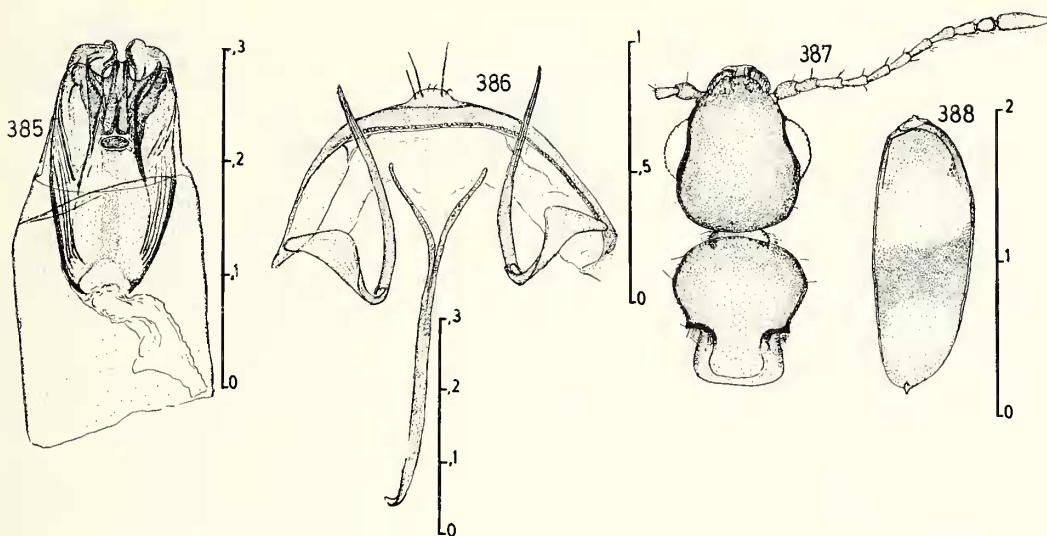
Wings. Fully developed.

Antennae (Fig. 387). Light testaceous, not darker and hardly broader at apex; last segment longer than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, thorax lighter than abdomen.

Male abdomen. Aedeagus (Fig. 385): median lobe is a short sclerotized tube with apical genital opening and a blunt short lobe on each side; lateral to these lobes a pair of slightly



Figs 385–388. A. (*A.*) *denticollis* spec. nov. 385: aedeagus. 386: retracted abdominal segment and spiculum gastrale of male. 387: head and prothorax. 388: elytron of male.

longer lobes, each with round inwards pointing apex; connecting membrane unarmed; tegmen little sclerotized and not pigmented, basal piece longer than apical piece. Retracted segment (Fig. 386): tergum narrow with proximal row of fenestrae; sternum consisting of pair of triangular sclerites each articulating with long distally pointing spike. Last exposed sternum with shallow apical indentation.

MATERIAL EXAMINED. South West Africa: Bezirk Omaruru, Farm Okosongoro [2115BD], 9.xi.1932, Holotype ♂, (Dr H. Thomsen) (NMW); Bezirk Otjiwarongo, Farm Okosongomongo [2016BC], 9.x.1933, Paratype ♂, (Dr H. Thomsen) (NMW).

Holotype and Paratype are labelled '*A. denticollis* nov. det. R. F. Heberdey'. Name and description were never published.

In addition there is a single ♀ from the same locality and collected on the same day as the holotype; it is dark testaceous all over and has no elytral pattern. It is labelled 'ab.'. The author is not sure that this specimen belongs to the same species as the two males.

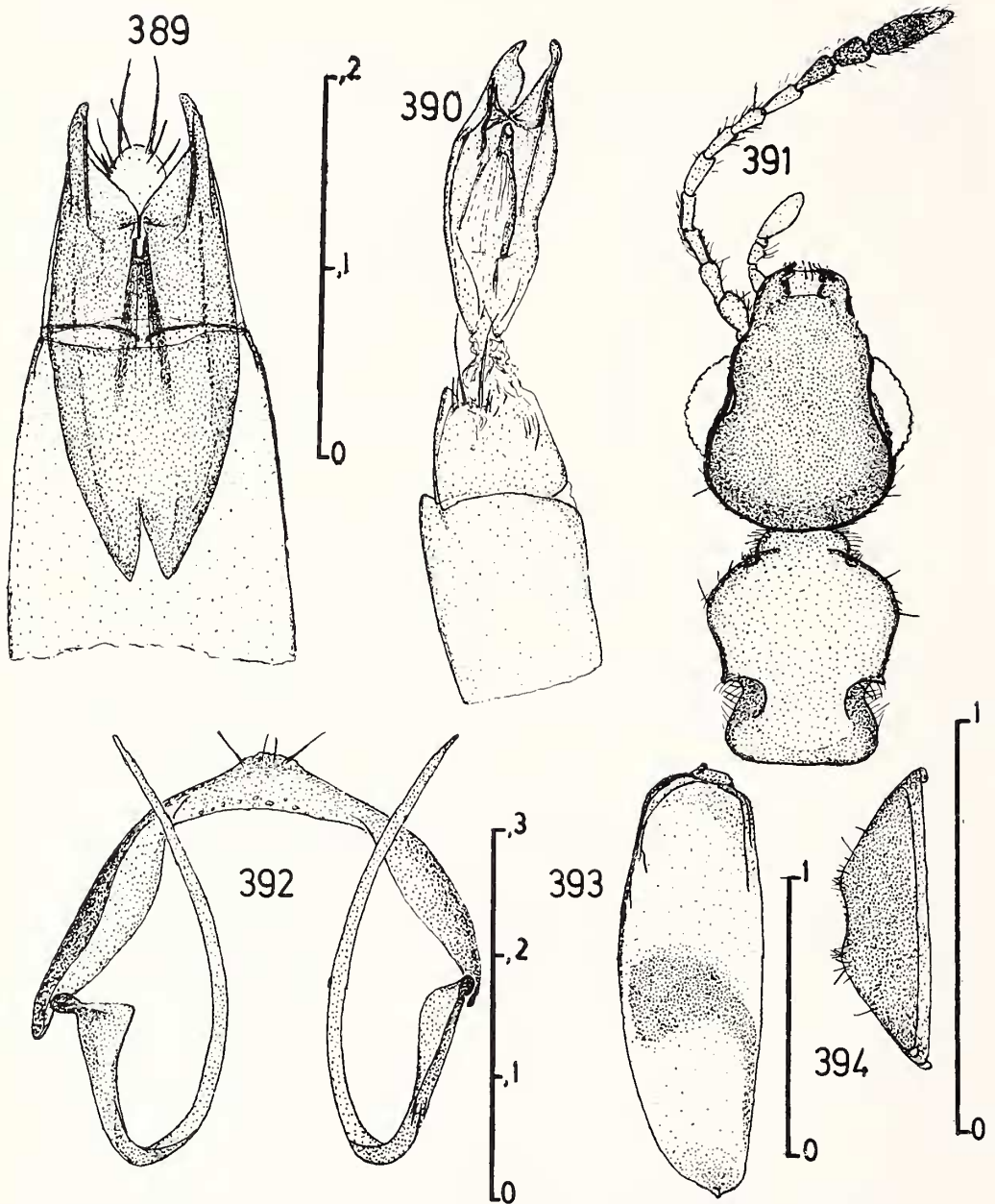
Anthicus (Aulacoderus) martini Pic, Figs 389–394

Anthicus (Aulacoderus) martini Pic, 1897b: 170

Size. Length 2,30 mm (1,92–2,61); width over broadest part of elytra 0,81 mm (0,66–0,90).

Head (Fig. 391). Glossy, testaceous to dark testaceous; posterior arch broadly round; punctures fine with fine procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 391). Rather glossy, testaceous; longer than broad, longer than head; round in front; punctures fine with fine recumbent hairs, slightly shorter than on head; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, filled with fine long hairs and with lateral tooth anterior to constrictions.



Figs 389-394: *A. (A.) martini* Pic. 389: aedeagus, inverted. 390: aedeagus, everted. 391: head and prothorax. 392: retracted abdominal segment of male. 393: elytron of male. 394: last exposed abdominal sternum of male.

Elytra (Fig. 393). Glossy, light testaceous with curved dark band in middle, which does not reach lateral margin and is continued backward along median suture; dark areas at base and apex are variable and may be absent; hairs fine and recumbent, longer than on prothorax; with some erect hairs especially along posterior half of lateral margin.

Wings. Fully developed.

Antennae (Fig. 391). Slender, testaceous, apical two or three segments darker but hardly broader; last segment longer than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 389): median lobe oval, with blunt claw on each side of genital opening which is small and without beaded margin; median lobe can protrude beyond tegmen (Fig. 390) by the eversion of connecting membrane which is unarmed; tegmen lightly sclerotized with apical piece shorter than basal piece. Retracted segment (Fig. 392): tergum narrow, with transverse row of very small fenestrae which are scattered in median area; sternum consisting of a pair of narrow triangular sclerites articulating with long distally pointing spikes. Last exposed sternum (Fig. 394) with shallow apical indentation.

MATERIAL EXAMINED. South Africa: Beaufort West [3222BC], no date, 1 ♂, Pic det., (Dr Martin) (AMSA); Vaal near Kimberley, Nooitgedacht [2824DB], xi.1945, 4 ♂♂, (J. H. Power) (AMSA); Vaal near Barkley West [2824DA], to meloid bait, xii.1948, 34 ♂♂, (R. J. B. Power) (AMSA); N. W. Cape Province, Richtersveld, Rosyntjieberg [2827AC], by light-trap, 11.x.1974, 19 ♂♂, 7 ♀♀, (M. W. Mansell) (AMSA); Van der Kloof, P. K. le Roux Dam and Rolfontein Nature Reserve [2924DD], to meloid bait, xi-xii.1978, 300 ♂♂, (J. C. van Hille) (AMSA); N. Cape Province, Witsand Farm [2822DA], 2-4.ii.1979, 6 ♂♂, (Lamoral, Bampton and Barnley) (AMSA). South West Africa: Aus [2628CB], xi.1929, 1 ♂, (R. E. Turner) (AMSA).

Anthicus (Aulacoderus) hobohmi spec. nov., Figs 395-398

Size. Length 2.51 mm (2.35-2.68); width over broadest part of elytra 0.85 mm (0.76-0.91).

Head (Fig. 397). Mat, chagrinated, dark testaceous; posterior arch broadly round; punctures very fine, hardly visible, with fine short procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 397). Mat, as dark as head or slightly lighter; longer than broad, narrower than head; punctures not quite as fine as on head, with fine short recumbent hairs; shoulders bluntly angular; lateral constrictions prominent at $\frac{2}{3}$ of the length of the prothorax.

Elytra. Glossy, testaceous to dark testaceous, without pattern; elongate with well developed shoulders; punctures distinct with fine light short recumbent hairs.

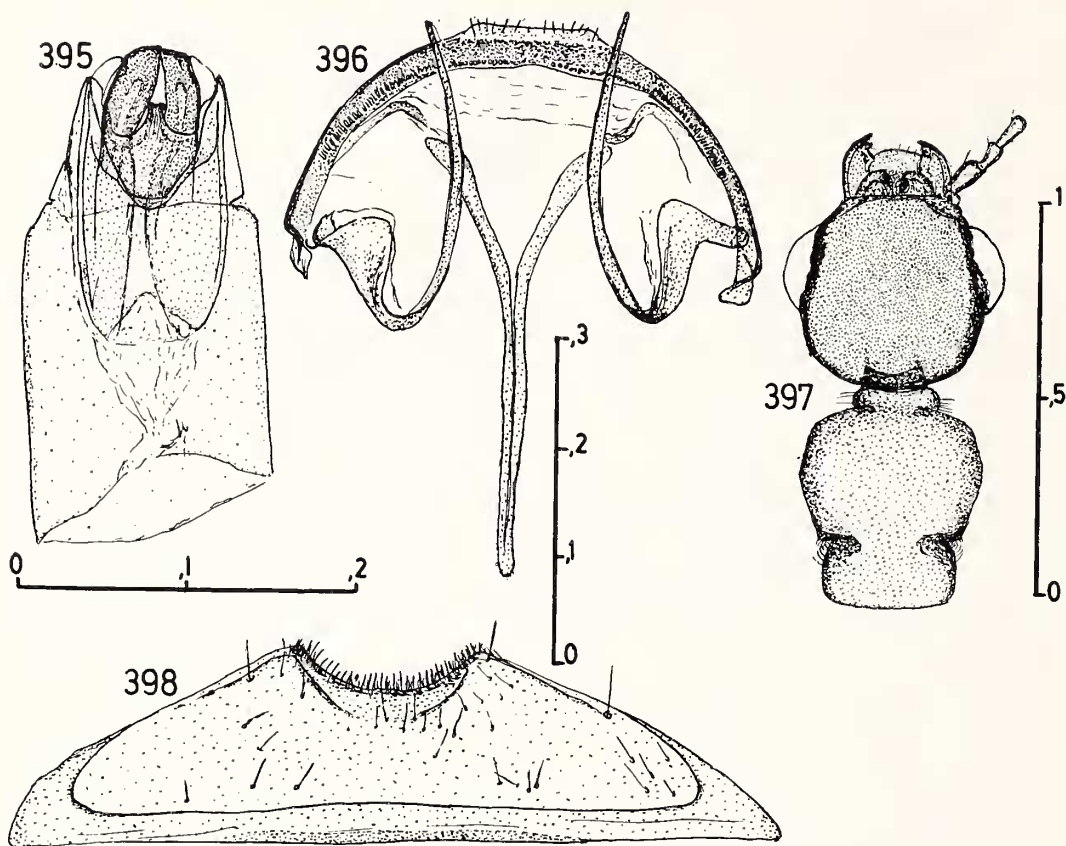
Wings. Fully developed.

Antennae. Testaceous, apical five segments slightly darker and little broader; last segment longer than two preceding ones together.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 395): median lobe with genital opening at end of short tube with on either side a broad blunt pigmented lobe; lateral to these a pair of unpigmented more slender blunt lobes; connecting membrane unarmed; tegmen with basal piece about twice as long as apical piece. Retracted segment (Fig. 396): tergum semi-circular, apically broadly truncate, with transverse row of fenestrae; sternum consisting of pair of thin triangular plates articulating with a pair of distally pointing spikes. Last exposed sternum (Fig. 398) with broad apical indentation with short close hairs.

MATERIAL EXAMINED. South West Africa: Abachaus, xii.1946, Holotype ♂, Paratypes 4 ♂♂, (G. Hobohm) (AMSA).



Figs 395-398. A. (*A.*) *hobohmi* spec. nov. 395: aedeagus. 396: retracted abdominal segment and spiculum gastrale of male. 397: head and prothorax. 398: last exposed abdominal sternum of male.

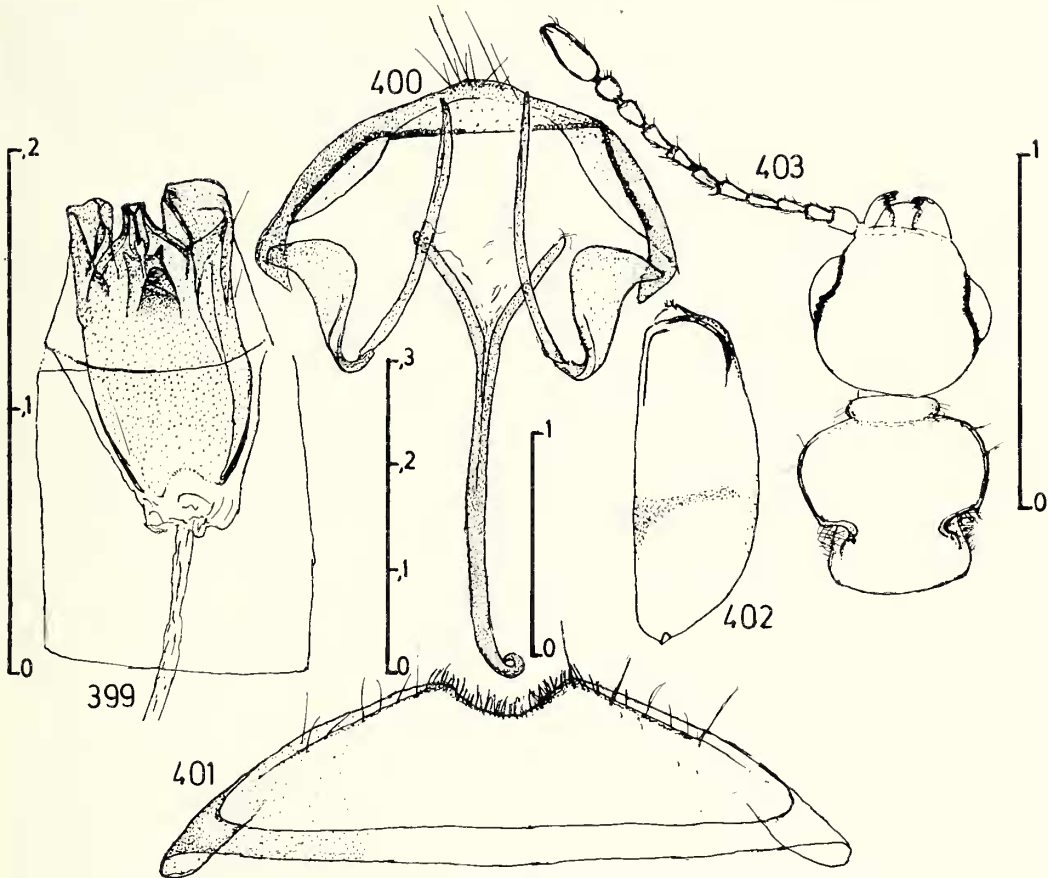
Anthicus (Aulacoderus) medleri spec. nov., Figs 399-403

Size. Length 2,27 mm (2,20-2,33); width over broadest part of elytra 0,81 mm (0,72-0,87).

Head (Fig. 403). Moderately glossy, testaceous; posterior arch broadly round; punctures very fine with fine short procumbent hairs. Eyes with black margin, rather large, not much bulging.

Prothorax (Fig. 403). Moderately glossy, testaceous; longer than broad, broader than head; shoulders round with two pairs of lateral erect hairs; punctures very fine with short recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, well developed and hairy.

Elytra (Fig. 402). Testaceous, with narrow transverse dark band behind the middle, broad at median suture, narrow at lateral margins; punctures larger and hairs coarser than on prothorax.



Figs 399-403. *A. (A.) medleri* spec. nov. 399: aedeagus. 400: retracted abdominal segment and spiculum gastrale of male. 401: last exposed abdominal sternum of male. 402: elytron of male. 403: head and prothorax.

Wings. Fully developed.

Antennae. Light testaceous; apical three segments slightly broader but not darker; last segment longer than two preceding ones together.

Maxillary palps and legs. Light testaceous.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 399): median lobe short and broad; genital opening at apex of triangular structure with on each side a slightly longer truncate lobe; proximal to genital opening lies a dark asymmetrical structure; connecting membrane unarmed; tegmen little sclerotized and not pigmented; apical piece with some long apical hairs, about half the length of basal piece. Retracted segment (Fig. 400): tergum with transverse row of fenestrae interrupted in middle; sternum consisting of a pair of triangular sclerites articulating with a pair of distally pointing spikes. Last exposed sternum (Fig. 401) with apical indentation with a fringe of close hairs.

MATERIAL EXAMINED. Nigeria: Serti, N. E. State, 29.iii.1970, Holotype ♂, (J. T. Medler) (AMSA). Congo (now Zaire): Parc national Garamba, à la lampe, 4.ii.1951, 1 ♀, (J. Verschuren) (MRAC); Parc national Garamba, Graminées sous des arbres, fauchage, à une tête de source, 22.ii.1951, 1 ♂, (J. Verschuren) (MRAC); Parc national Garamba, Galerie forestière, fauchage, taillis ombragés, 19.i.1951, 1 ♂, (H. de Saeger) (MRAC).

SECTION 16

The species of this section form the Flavopictus Group (van Hille 1961). The species resemble each other in many respects and are closely related. The structure of the aedeagus is uniform and quite different from that of the species of the preceding sections.

The median lobe of the aedeagus is membranous and can slide up and down in the tegmen (Fig. 404); it has an oval genital opening. Proximal to the genital opening lies a short slender

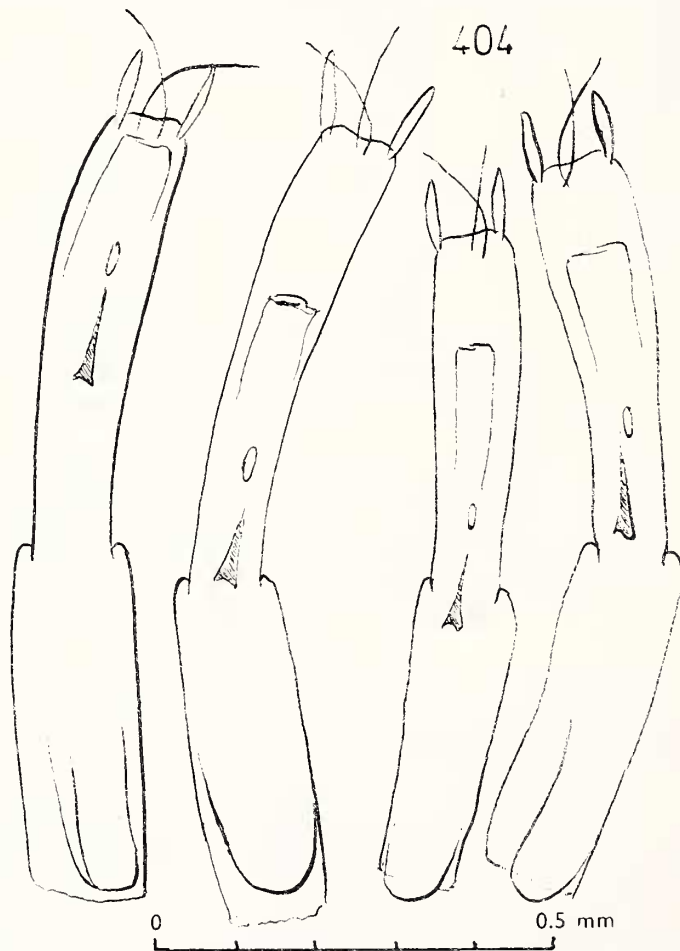


Fig. 404. A. (*A.*) *poweri* van Hille. 404: four different aedeagi showing various positions of median lobe in tegmen.

bar, the only sclerotized part of the median lobe. The bar has a pointed apex and a slightly broader base which in some species is shortly forked. The base of the median lobe is surrounded by the connecting membrane which in most species has fine pustules. The attachment of the connecting membrane to the tegmen is not visible in the preparations.

Of the seven species of this section four occur in South Africa, one in Zimbabwe, one in Lebanon and one in Algeria and Morocco.

Key to the species of Section 16

- 1 Apex of tegmen of aedeagus flat or concave 2
- Apex of tegmen of aedeagus convex 4
- 2 Apex of tegmen of aedeagus concave with four blunt spines of different length on each side (Fig. 405) *lutopictus*
- Apex of tegmen of aedeagus flat 3
- 3 Tegmen of aedeagus with apical fringe of about 20 dark hairs (Fig. 410) *manselli*
- Tegmen of aedeagus with an apical lateral spine on each side (Fig. 413) *poweri*
- 4 Tegmen of aedeagus with two apical or subapical spines on each side 6
- Tegmen of aedeagus with more than two apical or subapical spines on each side 5
- 5 Tegmen of aedeagus with four apical or subapical sharp light spines on each side (Fig. 420) *lovemorei*
- Tegmen of aedeagus with about seven apical or subapical spines on each side (Fig. 422) *coarcticollis*
- 6 Apical spines of tegmen of aedeagus stout and dark (Fig. 425) *flavopictus*
- Apical spines of tegmen of aedeagus thin and light (Fig. 428) *vaulogeri*

Anthicus (Aulacoderus) lutopictus van Hille, Figs 405–409

Anthicus (Aulacoderus) lutopictus van Hille, 1961: 236–239

Size. Length 2,55 mm (2,20–3,50); width over broadest part of elytra 0,86 mm (0,75–1,10).

Head. Testaceous to dark testaceous; elongate; posterior arch round, narrowing from eyes to mouthparts; rather closely punctured with short whitish procumbent hairs. Eyes large and bulging.

Prothorax. Glossy, testaceous to dark testaceous; longer than broad, as broad as head; shoulders round; punctures fine with short whitish recumbent hairs; with prominent lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, connected by a hairy dorsal groove.

Elytra (Fig. 408). Light testaceous to testaceous, with dark band at shoulder area and another dark band behind the middle, often not reaching the lateral margins; in some specimens also the apex is dark; the dark areas vary in extent and intensity; less closely punctured and less hairy than prothorax.

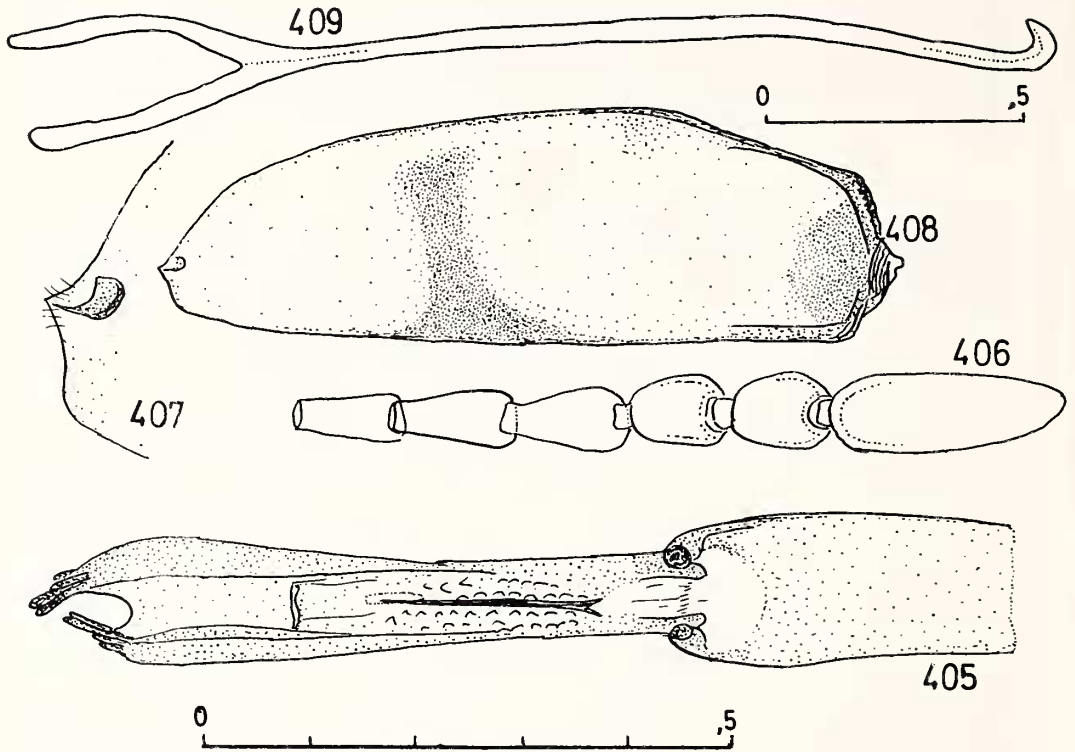
Wings. Fully developed.

Antennae. Light testaceous, apical segments hardly broader and not darker; last segment (Fig. 406) longer than two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 405): median lobe membranous with slender arrow-shaped sclerotized longitudinal bar of which pointed apex lies at level of narrow oval genital opening which has finely beaded margin; the bar is shortly forked at proximal end; connecting membrane surrounding base of median lobe, with small pointed folds; tegmen with apical piece twice as long as basal piece, with concave apex with four blunt spines on each side, of which second from margin is stoutest and third from margin longest. Retracted segment: tergum little sclerotized with blunt hairy apex and transverse row of fenestrae, interrupted in mid-



Figs 405-409: *A. (A.) lutopictus* van Hille. 405: aedeagus. 406: apex of antenna. 407: apex of elytron of male. 408: elytron of male. 409: spiculum gastrale of male.

dle; sternum consists of pair of narrow lightly sclerotized plates. Spiculum gastrale (Fig. 409) elongate with short basal hook. Last exposed sternum with apical indentation like that of *A. (A.) poweri* (Fig. 418).

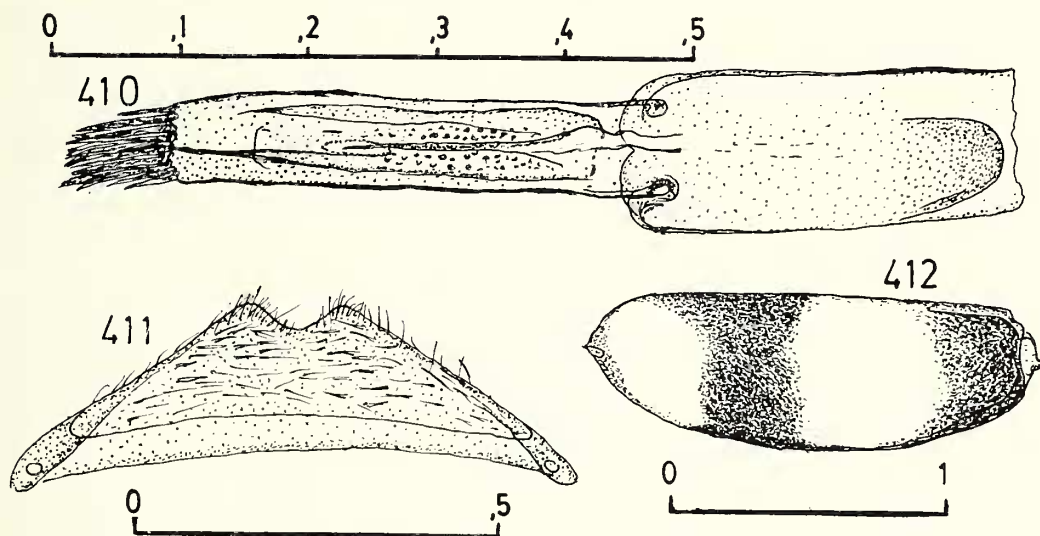
MATERIAL EXAMINED. South Africa: between Grabouw and Houwhoek [3419AA], 29.xii.1950, Holotype ♂, (Brinck & Rudebeck) (UELM); Cedarberg, Kromriver Farm [3219AC], 5.i.1975, 2 ♂♂, (M. W. Mansell) (AMSA); Namaqualand, Horingsgat [3018AC], in Malaise trap, 24-25.ii.1975, 3 ♂♂, (Lamor, Barnley and Bampton) (AMSA).

Anthicus (Aulacoderus) manselli spec. nov., Figs 410-412

Size. Length 2,53 mm (2,00-2,85); width over broadest part of elytra 0,91 mm (0,88-1,05).

Head. Glossy, testaceous to black, mouthpart region testaceous; posterior arch broadly round; punctures fine with short procumbent hairs. Eyes large, somewhat bulging.

Prothorax. Glossy, testaceous to dark testaceous; broader than long, as broad as head; punctures fine with recumbent hairs, longer than on head; with prominent lateral constrictions at $\frac{3}{4}$ of the length of the prothorax.



Figs 410-412. A. (*A.*) *manselli* spec. nov. 410: aedeagus. 411: last exposed abdominal sternum of male. 412: elytron of male.

Elytra (Fig. 412). Light testaceous with two transverse black bands, the anterior covering the shoulder area, the posterior one just behind middle, extending backwards along median suture; in some specimens, especially in males, apex also dark; punctures fine with fine grey recumbent hairs, slightly longer than on prothorax.

Wings. Fully developed.

Antennae. Testaceous, not darker or broader at apex; last segment longer than two preceding ones together.

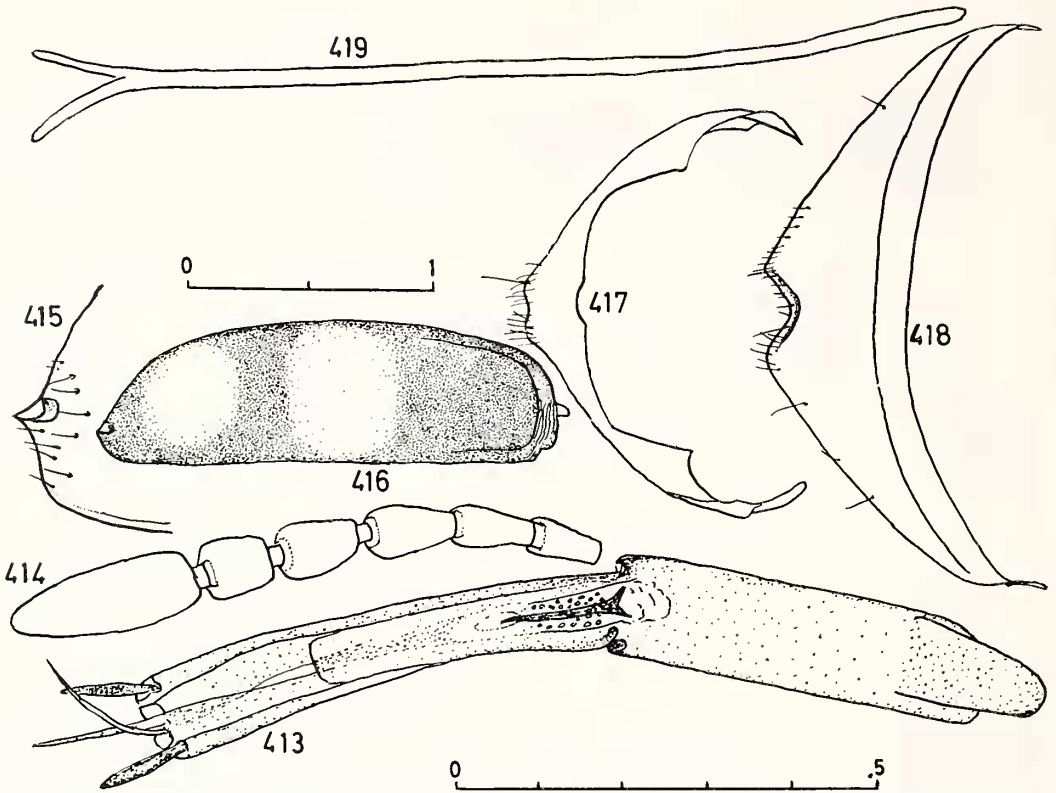
Legs. Testaceous.

Undersurface. Testaceous, darker towards apex.

Male abdomen. Aedeagus (Fig. 410): median lobe membranous with narrow genital opening, with finely beaded margin; with narrow sclerotized bar, proximally to genital opening; connecting membrane with small pustules or denticles, surrounding base of median lobe; tegmen: apical piece longer than basal piece and with apical fringe of about 16 spiny hairs. Last exposed sternum (Fig. 411) with apical indentation and dark spiny hairs pointing transversely to median line on surface, but pointing distally on apical margin.

Female abdomen. Last exposed tergum with apical indentation. Last exposed sternum with blunt apical point; hairs pointing to apex.

MATERIAL EXAMINED. South Africa: Bains Kloof [3319CA], at light, 10.i.1978, Holotype ♂, Paratypes 16 ♂♂, 9 ♀♀, (M. W. Mansell) (AMSA); Cedarberg [3219AA], at light, 5.i.1975, Paratype 1 ♂, (M. W. Mansell) (AMSA); Clanwilliam, Algeria Forest [3219BB], at light, 8.i.1978, Paratypes 28 ♂♂, 40 ♀♀, (M. W. Mansell) (AMSA); Villiersdorp, Aasvoëlkop [3319CD], 19.xii.1978, Paratype 1 ♂, (G. H. Walter & S. Nesor) (AMSA); Ceres [3319AD], xi-xii.1920, Paratypes 1 ♂, 3 ♀♀, (R. E. Turner) (BMNH); Assegaaibosch [3324CD], to light, 4-5.i.1972, Paratypes 2 ♂♂, (Southern African Expedition, British Museum) (BMNH).



Figs 413-419. *A. (A.) poweri* van Hille. 413: aedeagus. 414: apex of antenna. 415: apex of elytron of male. 416: elytron of male. 417: tergum of retracted abdominal segment of male. 418: last exposed abdominal sternum of male. 419: spiculum gastrale of male.

Anthicus (Aulacoderus) poweri van Hille, Figs 413-419

Anthicus (Aulacoderus) poweri van Hille, 1961: 236

Size. Length 2,87 mm (2,30-3,17); width over broadest part of elytra 0,93 mm (0,80-1,10).

Head. Slightly glossy, dark testaceous to almost black; posterior arch broadly round; punctures very fine with light procumbent hairs. Eyes large, somewhat bulging.

Prothorax. Slightly glossy, testaceous to dark testaceous; longer than broad, slightly narrower than head; shoulders round; punctures very fine with light recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, well covered by long hairs and dorsally connected by a shallow transverse depression.

Elytra (Fig. 416). Elongate, glossy, dark testaceous to black with two pairs of light maculae, anterior pair in front of middle, posterior pair subapical; punctures larger than on prothorax, with short recumbent hairs.

Wings. Fully developed.

Antennae. Testaceous; apical segments (Fig. 414) not darker and hardly broader; last segment longer than two preceding ones together.

Legs. Testaceous to dark testaceous; tarsi lighter.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 413): median lobe membranous apart from sclerotized arrow-shaped longitudinal bar of which apex lies at level of oval genital opening, which has a finely beaded margin; connecting membrane with some small pustules round base of arrow-shaped bar; tegmen: apical piece with a single pair of apical spines and with membranous in-folding margins with interlocking apical points; basal piece shorter than apical piece. Retracted segment: tergum (Fig. 417); sternum consists of a pair of narrow plates. Last exposed sternum (Fig. 418) with round apical indentation.

MATERIAL EXAMINED. South Africa: Vaal River nr Barkley West [2824DA], Holotype ♂, Paratypes 6 ♂♂, (R. J. B. Power) (AMSA); Matjesfontein [3320BA], ix.1928, 4 ♂♂, (R. E. Turner) (BMNH); Ladismith [3321AD], at light, 4.i.1951, Paratype ♂, (Brinck & Rudebeck) (AMSA); Vaal River near Kimberley, Nooit Gedacht, [2824DB], xi.1955, Paratypes 10 ♂♂, (J. H. Power) (AMSA); Swellendam, Komnader [3420AB], to meloid bait, 1 ♂, (J. C. van Hille) (AMSA).

Anthicus (Aulacoderus) lovemorei spec. nov., Figs 420–421

Size. Length 2,22 mm (2,00–2,55); width over broadest part of elytra 0,77 mm (0,72–0,80).

Head. Glossy, testaceous; posterior arch broadly round; punctures minute with fine recumbent hairs. Eyes large and bulging.

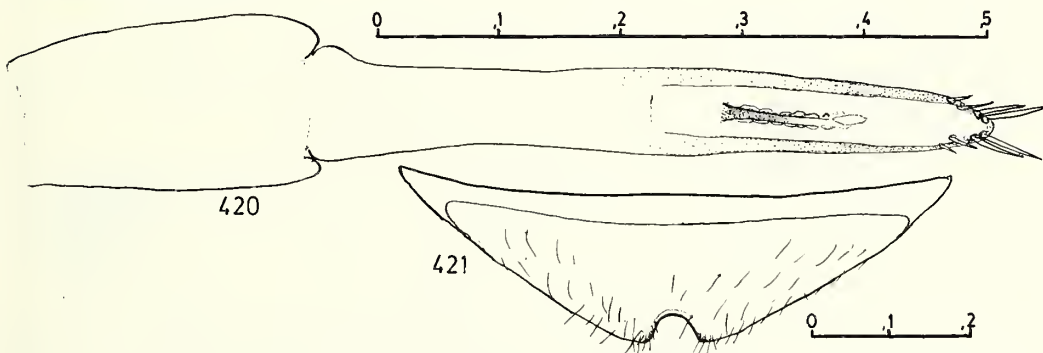
Prothorax. Glossy, light testaceous; as long as broad, narrower than head; shoulders round; punctures fine with recumbent hairs; lateral constrictions large and hairy at $\frac{2}{3}$ of the length of the prothorax; dorsally hardly depressed at base, without long hairs.

Elytra. Glossy, elongate, light testaceous with variable dark markings: there may occur a dark transverse band behind middle which extends along median suture backward almost to apex; in other specimens this band is reduced to a triangular area on the median suture so that the two elytra make a dark diamond-shaped area behind the middle; or the dark markings are completely absent.

Wings. Fully developed.

Antennae. Testaceous, rather short; apical 3–4 segments slightly broader but not darker; last segment almost as long as three preceding segments together in male; in female not quite as long.

Legs. Testaceous.



Figs 420–421. A. (A.) *lovemorei* spec. nov. 420: aedeagus. 421: last exposed abdominal sternum of male.

Undersurface. Light testaceous to testaceous, abdomen slightly darker than thorax.

Male abdomen. Aedeagus (Fig. 420): median lobe short with slender sclerotized bar covered by minute dark spots, but fading away toward apex, where it approaches the small oval genital opening; connecting membrane without distinct sclerotizations; tegmen: apical piece with two long and two shorter apical spines on each side; basal piece about half as long as apical piece. Retracted segment: tergum bluntly pointed at apex, with a number of hairs and transverse row of fenestrae, interrupted in middle; sternum consists of pair of narrow membranous plates each with a single sclerotized rib. Last exposed sternum (Fig. 421) with apical indentation.

MATERIAL EXAMINED. Rhodesia (now Zimbabwe): Lubu River, Sebungwe District, on flowers of *Elephantorrhiza goetzei* (Harms) Harms, 3–10.ix.1951, Holotype ♂, Paratypes 4 ♂♂, 3 ♀♀, (D. F. Lovemore) (AMSA).

The last part of the alimentary canal is full of pollen.

Anthicus (Aulacoderus) coarcticollis Baudi, Figs 421–424

Anthicus (Aulacoderus) coarcticollis Baudi, 1881: 295

Size. Length 2.50 mm; width over broadest part of elytra 0.75 mm.

Head. Glossy, light testaceous; posterior arch broadly round; punctures fine with short coarse procumbent hairs. Eyes large and bulging.

Prothorax. Glossy, light testaceous; as long as broad, narrower than head; collar with fringe of erect hairs; punctures fine with recumbent hairs; shoulders round; lateral constrictions at $\frac{2}{3}$ of length of prothorax, deep and hairy and connected by a deep transverse hairy groove.

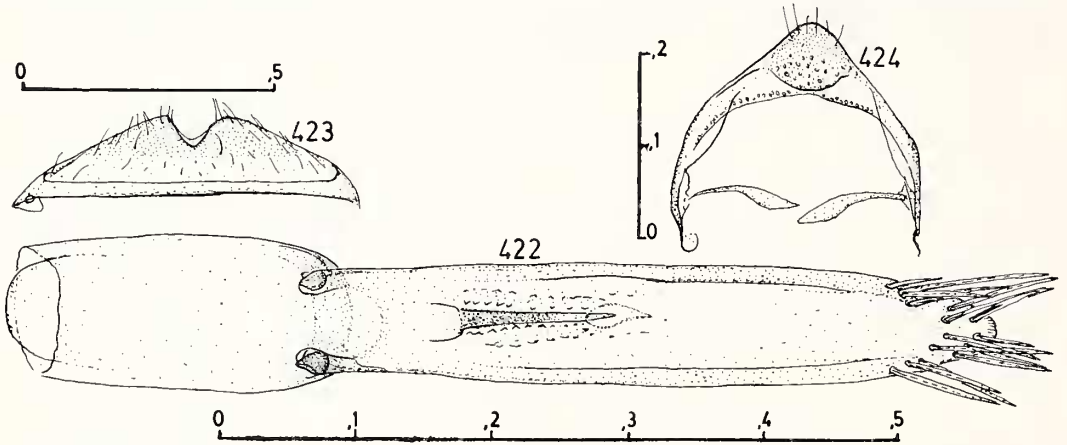
Elytra. Glossy, light testaceous; elongate, apically obliquely truncate; punctures distinct with recumbent hairs, longer than on prothorax; in male with small apical point and prominent notch.

Wings. Fully developed.

Antennae. Light testaceous; apical five segments slightly broader; last segment slightly longer than two preceding ones together.

Legs and undersurface. Light testaceous.

Male abdomen. Aedeagus (Fig. 422): median lobe membranous except the pointed longi-



Figs 422–424. A. (*A.*) *coarcticollis* Baudi. 422: aedeagus. 423: last exposed abdominal sternum of male. 424: retracted abdominal segment of male.

tudinal bar of which the proximal half is covered with minute black spots; it lies proximal to the diamond-shaped genital opening which has a beaded margin; connecting membrane, with small longitudinal teeth, surrounds base of median lobe but its distal part is not visible; tegmen: apical piece with blunt apical point with 8–10 spines on each side, twice as long as the basal piece. Retracted segment (Fig. 424): tergum with hairy bluntly pointed apex and proximal transverse row of fenestrae and several more fenestrae not arranged in a definite pattern; sternum consists of a pair of narrow plates. Last exposed sternum (Fig. 423) with a somewhat rounded triangular apical indentation.

MATERIAL EXAMINED. Lebanon: no date, Type ♂ (no collector) (MNHN)

In the description of specimens from Syria, Baudi mentions a dark macula on the elytra and three dark abdominal sternites. These dark markings do not occur on the specimen from Lebanon, the only specimen the author has seen.

Anthicus (Aulacoderus) flavopictus Laf., Figs 425–427

Anthicus (Aulacoderus) flavopictus La Ferté, 1848: 268

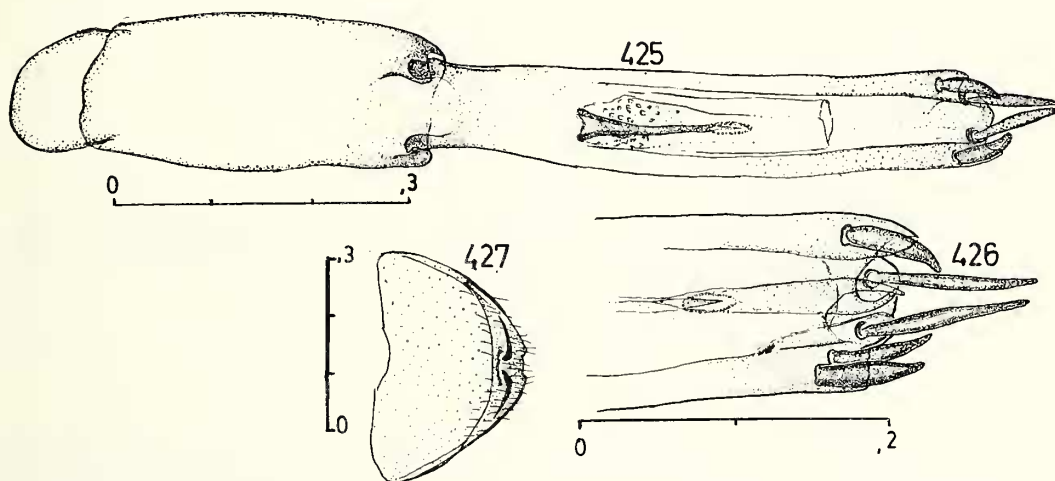
Size. Length 3,00 mm (2,77–3,27); width over broadest part of elytra 0,92 mm (0,87–1,05).

Head. Slightly glossy, very dark testaceous to black; posterior arch round, narrowing by an almost straight line to eyes and mouthparts; punctures fine with dark procumbent hairs. Eyes hardly bulging.

Prothorax. Slightly glossy, dark testaceous; slightly broader than long, broader than head; shoulders round; with fine recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with long light hairs.

Elytra. Elongate, dark testaceous to black with a pair of light maculae in front of middle, usually reaching lateral margin but not median suture, and a pair of less distinct subapical maculae; shoulders round; distinctly punctured, hairs recumbent, of the same colour as the area on which they are implanted. Males with small apical point and prominent square notch.

Wings. Fully developed.



Figs 425–427. A. (*A.*) *flavopictus* Laf. 425: aedeagus. 426: apex of aedeagus with extra spine. 427: last exposed abdominal tergum of female.

Antennae. Slender, testaceous; three apical segments hardly darker and only slightly broader; last segment longer than two preceding ones together.

Legs. Testaceous; femora darker and tarsi lighter.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Fig. 425): median lobe short and membranous apart from narrow pointed sclerotized bar; connecting membrane surrounding base of median lobe where it has fine pustules; distal part not visible; tegmen with apical piece almost one and a half times as long as basal piece; apical piece convex at apex with two blunt spines on each side of which the lateral one is shorter and broader than the median one. Retracted segment: tergum with truncate apex, without row of fenestrae; sternum consists of a pair of narrow thin plates. Last exposed sternum with apical indentation resembling that of *A. (A.) poweri* (Fig. 417).

Female abdomen. Last exposed tergum (Fig. 427).

MATERIAL EXAMINED. South Africa: Dunbrody [3325BC], 10.xi.1902, 1 ♂, (Fr O'Neil) (AMSA); same locality, to light, 10–12.xii.1903, 4 ♂♂, 1 ♀, (Fr O'Neil) (AMSA); same locality, 10.xii.1905, 1 ♂ (Fr O'Neil) (AMSA); Willowmore [3323AD], ix.1913, 1 ♀, (Dr Brauns) (AMSA); Somerset East [3225DA], xii.1930, 2 ♂♂, (R. E. Turner) (BMNH); Jansenville, Fairview, [3224DC], to meloid bait, 3 ♂♂, (J. C. van Hille) (AMSA); Grahamstown, Hilton [3326BC], in Malaise trap, 1–16.i.1971, 35 ♂♂, (F. W. Gess) (AMSA).

Anthicus (Aulacoderus) vaulogeri Pic, Figs 428–429

Anthicus (Aulacoderus) vaulogeri Pic, 1897c: 297

Size. Length 2,12 mm (2,10–2,15); width over broadest part of elytra 0,83 mm (0,81–0,86).

Head. Glossy, testaceous; posterior arch broadly round; punctures fine with fine grey pro-cumbent hairs. Eyes somewhat bulging.

Prothorax. Glossy, testaceous, slightly lighter than head; as long as broad, narrower than head; round in front; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, hairy and connected by a sharp transverse dorsal depression; punctures fine with short recumbent hairs.

Elytra. Glossy, light testaceous; rather coarsely punctured with fine recumbent hairs and short erect hairs.

Wings. Fully developed.

Antennae. Testaceous; apical segments not darker but slightly broader; apical segment pointed and longer than two preceding ones together.

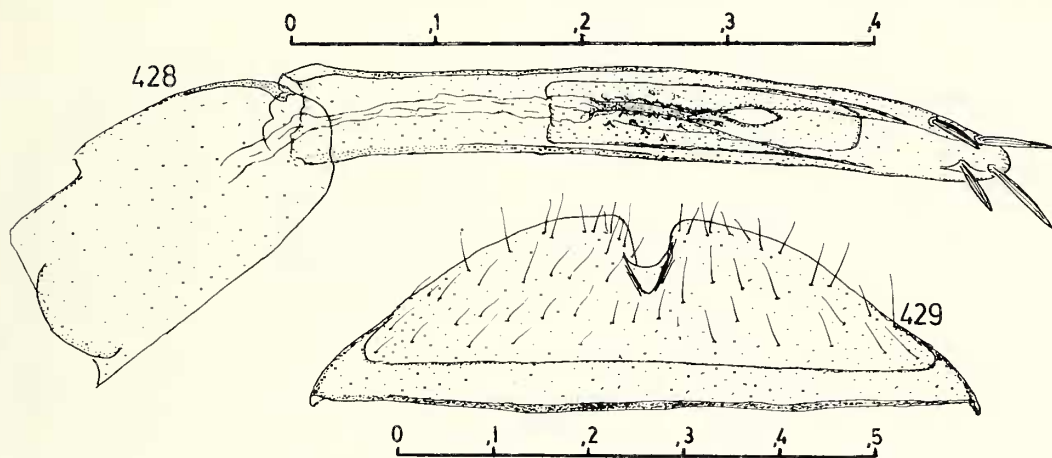
Legs. Testaceous, slightly lighter than antennae.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 428): median lobe short and membranous apart from longitudinal sclerotized bar which fades out in the region of the spindle-shaped genital opening; connecting membrane surrounding the base of median lobe, with fine triangular folds; tegmen: apical piece with blunt apex with two pairs of spines; basal piece less than half the length of apical piece. Last exposed sternum (Fig. 429) with apical indentation.

MATERIAL EXAMINED. Algeria: Region of Ouarsenis, to light, no date, Type ♂, (Capt. de Vauloger) (MNHN). Morocco: Gd. Atlas, Glaoui VII, on *Clematis flammula*, no date, 1 ♂, (no collector) (NMW).

The latter specimen has been dissected by von Krekich; the aedeagus and the last exposed abdominal sternite of the ♂ are mounted on slide 688B. This slide is labelled '*A. mecheriensis* Chob. det. v. Krekich'. This last species was described by Chobaut (1896) from Algeria, Mecheria, S. Oran. It was found that the specimen and its genitalia are identical with the type of *A. (A.) vaulogeri* Pic. The descriptions of the two species are very similar but Pic (1897c) men-



Figs 428-429. *A. (A.) vaulogeri* Pic. 428: aedeagus. 429: last exposed abdominal sternum of male.

tions that *A. vaulogeri* has a broader and more square prothorax than *A. mecheriensis*. It is possible that the names are synonyms in which case the more recent name *vaulogeri* should fall away. However, the younger name has been retained because the Paris specimen is a type from the type locality, while the specimen named by von Kreckich is not a type of *A. mecheriensis*, nor does it come from the type locality. The author has not seen an authentic specimen of *A. mecheriensis*.

SECTION 17

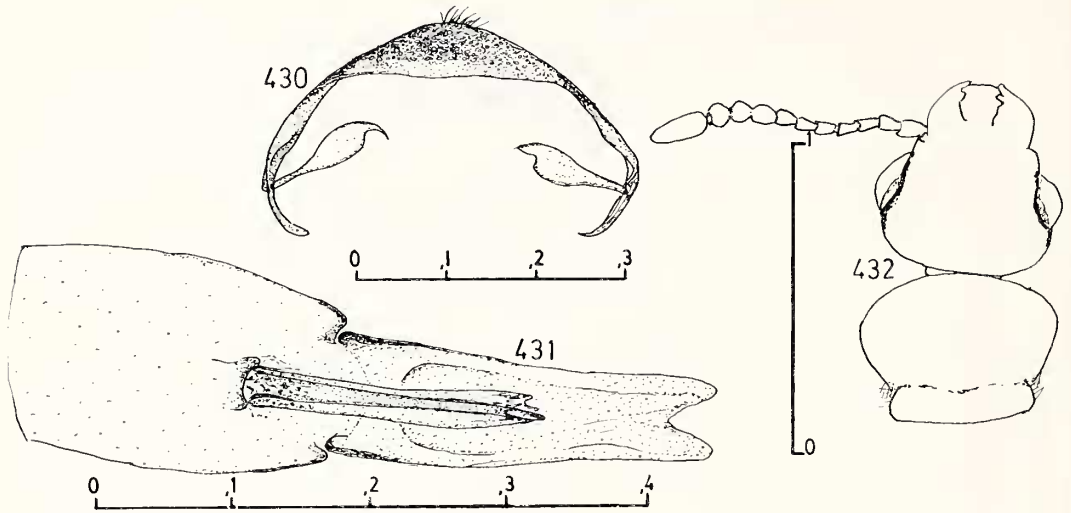
In the three species in this section the central part of the aedeagus is a short (0.2-0.25 mm) sclerotized bar with a narrow elongate genital opening at the pointed apex. This bar is taken to be the median lobe. Its base is surrounded by a membrane with small pustules or denticles in two of the three species. This membrane is a modified connecting membrane; it does not surround the median lobe but lies as a strand on the ventral side of the median lobe.

In the case of *A. (A.) peyroni* it is shown (Fig. 436) that the median lobe and the connecting membrane can move to the apex of the tegmen. The connecting membrane folds double along the ventral side of the aedeagus and the median lobe becomes exposed with its apex and genital opening beyond the apex of the tegmen. The mechanism of the extrusion is not known.

The species of this section come from Kenya, Ethiopia and Syria respectively.

Key to the species of Section 17

- 1 Connecting membrane as long as median lobe, with small apical papillae (Fig. 431) *kaffensis*
- Connecting membrane longer than median lobe 2
- 2 Connecting membrane almost twice as long as median lobe, with apical sclerotized spines; tegmen without hairs (Fig. 434) *chappuisi*
- Connecting membrane more than twice as long as median lobe, ending in a pair of pointed lobes; tegmen with two pairs of subapical spiny hairs (Fig. 435) *peyroni*



Figs 430–432. *A. (A.) kaffensis* spec. nov. 430: retracted abdominal segment of male. 431: aedeagus. 432: head and prothorax.

Anthicus (Aulacoderus) kaffensis spec. nov., Figs 430–432

Size. Length 2.07 mm (1.92–2.20); width over broadest part of elytra 0.75 mm (0.65–0.83).

Head (Fig. 432). Glossy, black; posterior arch broad; closely punctured, with short procumbent hairs. Eyes somewhat bulging.

Prothorax (Fig. 432). Somewhat glossy, black; broader than long, broader than head; finely and densely punctured, with short recumbent hairs; lateral constrictions at $\frac{1}{4}$ of length of prothorax, connected by a sharply indented groove over dorsal surface.

Elytra. Glossy, black; oval and rather broad; finely and densely punctured with short grey recumbent hairs.

Wings. Fully developed.

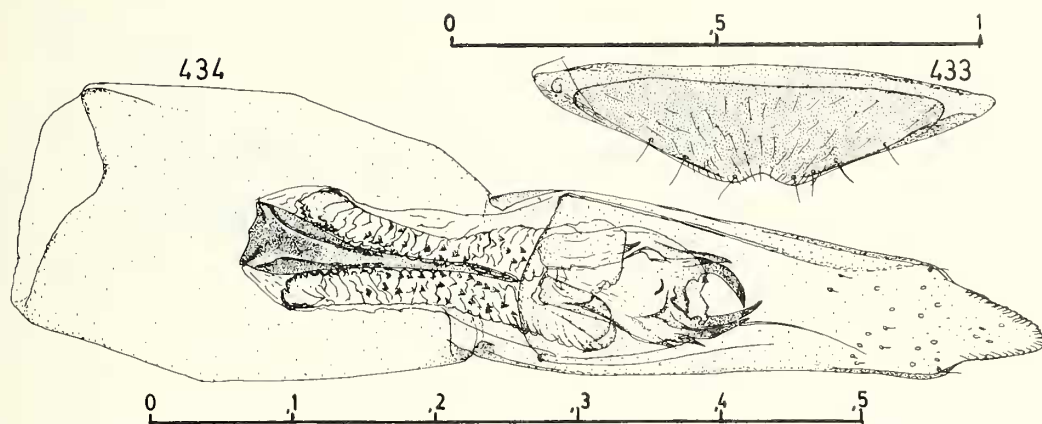
Antennae (Fig. 432). Dark testaceous; last four segments slightly broader; apical segment slightly darker and longer than two preceding ones together.

Legs. Dark testaceous; distal half of femora slightly darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 431): median lobe is a slender sclerotized bar with pointed apex and elongate apical genital opening without beaded margin; its base is broad; connecting membrane attached to the broad base of the median lobe, with small dark pustules at base and small spines at apex; tegmen indented at apex, apical piece longer than basal piece. Retracted segment (Fig. 430): tergum broadly horseshoe-shaped, with some apical hairs; sternum consisting of a pair of short sclerites, apically pointed. Last exposed sternum apically very slightly indented.

MATERIAL EXAMINED. Ethiopia: Kaffa Province, Mui Game Reserve, 700 m, 10–11.iv.1972, Holotype ♂, Paratypes 28 specimens, (R. O. S. Clarke) (MRAC); Sidamo Province, 105 km east of Neghelli, 1 300–1 500 m, 7–8.v.1975, Paratypes 2 specimens, (R. O. S. Clarke) (MRAC); Sidamo Province, Duo Parma River 1 050 m, 12–13.v.1975, 1 specimen, (R. O. S. Clarke) (MRAC).



Figs 433-434. A. (A.) *chappuisi* Pic. 433: last exposed abdominal sternum of male. 434: aedeagus.

Anthicus (Aulacoderus) chappuisi Pic, Figs 433-434

Anthicus (Aulacoderus) chappuisi Pic, 1939: 163

Size. Length 2,85 mm width over broadest part of elytra 0,87 mm.

Head. Glossy, dark testaceous; posterior arch broadly round; with fine punctures and fine procumbent hairs. Eyes not much bulging.

Prothorax. Glossy, slightly lighter than head; longer than broad, as broad as head; shoulders sloping and somewhat angular; punctures fine with fine recumbent hairs; lateral constrictions prominent, at $\frac{2}{3}$ of length of prothorax, with long hairs and connected by a dorsal transverse groove which is hairy except in the median area.

Elytra. Glossy, testaceous but darker on shoulders and with a dark transverse band behind the middle; apical quarter lighter; elongate and rather narrow; with fine punctures and fine recumbent hairs; some erect hairs on apical area.

Wings. Fully developed.

Antennae. Testaceous, apical segments not darker but somewhat broader; last segment as long as two preceding ones together.

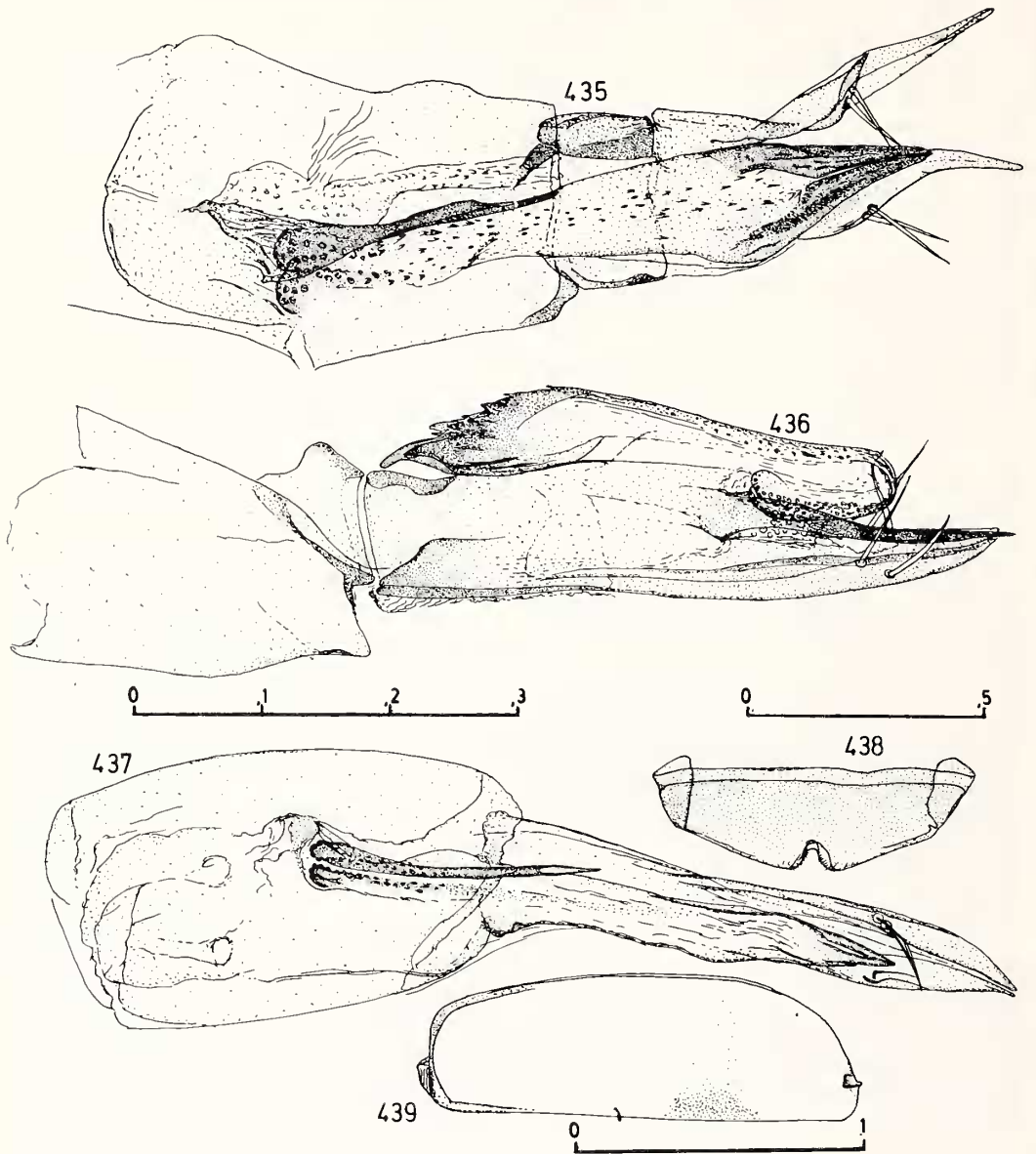
Legs. Testaceous, tarsi light testaceous.

Undersurface. Reddish testaceous.

Male abdomen. Aedeagus (Fig. 434): median lobe well sclerotized with sharply pointed apex with elongate apical genital opening; connecting membrane attached to base of median lobe in the form of wrinkled membranes with small distally pointing denticles; distal to the apex of the median lobe the membrane has large distally pointing spines, three on one side, four on the other side; tegmen with bluntly pointed apical piece, longer than basal piece. Retracted segment: tergum apically pointed, with indistinct transverse row of fenestrae; sternum consists of a pair of slender sclerotized bars. Last exposed sternum (Fig. 433) with shallow apical indentation.

MATERIAL EXAMINED. Kenya: Lokitang, Turkana Nord, 750 m, no date, Type ♂, (Mission de l'Omo 1932-1933, C. Arambourg, P. A. Chappuis & R. Jeannel.)

This specimen is labelled '*Anthicus (Aulacoderus) alitiensis* var. *chappuisi*' in Pic's handwriting but it is described as *Anthicus (Aulacoderus) chappuisi*: '. . . très voisin de *A. alitiensis* Pic, s'en distingue par la tête plus foncée, le prothorax un peu moins robuste, le sillon plus éloigné de la base, les élytres à dessins noirs autrement disposés'.



Figs 435-439. *A. (A.) peyroni* Pic. 435: aedeagus, inverted, specimen from Ethiopia. 436: aedeagus, everted, side view, specimen from Ethiopia. 437: aedeagus, inverted, ventral view, type from Syria. 438: last exposed abdominal sternum of male. 439: elytron of male.

Anthicus (Aulacoderus) peyroni Pic. Figs 435–439

Anthicus (Aulacoderus) peyroni Pic, 1900b: 78

Size. Length 2,45 mm (2,32–2,65); width over broadest part of elytra 0,87 mm (0,85–0,90).

Head. Glossy, testaceous; posterior arch round; punctures fine with fine procumbent hairs. Eyes darkly margined, rather large and somewhat bulging.

Prothorax. Glossy, slightly lighter than head; longer than broad, narrower than head; shoulders round; punctures fine with fine recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, with fine long hairs.

Elytra (Fig. 439). Glossy, light testaceous; in male with incomplete dark transverse band behind the middle; in female dark on shoulder and a complete dark transverse band behind middle; these are probably not sexual differences but progression and regression of pigmentation within the species; with fine punctures with fine short recumbent hairs.

Wings. Fully developed.

Antennae. Testaceous; apical four segments slightly broader; apical segment of male as long as three preceding ones together, in female as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Testaceous, abdomen darker than thorax.

Male abdomen. Aedeagus (Figs 435, 436 and 437): median lobe short slender well sclerotized bar-shaped with pointed apex with elongate genital opening; connecting membrane surrounding base of median lobe as a pair of strands with dark pustules on the proximal area; it proceeds distally as a strand more than twice the length of the median lobe and ends in a pair of subapical pointed lobes; tegmen membranous: apical piece ending in a pair of pointed lobes, each with two long hairs; basal piece hardly shorter than apical piece. Retracted segment: tergum little sclerotized with an indication of a transverse row of fenestrae; sternum consists of a pair of thin narrow plates, apically pointed and with another point on the proximal margin, more than half-way from the attachment to the tergite. Last exposed sternum (Fig. 438) with apical indentation.

MATERIAL EXAMINED. Syria: no date, Types 1 ♂, 1 ♀, Krekich *vidit*, (Reitmerz (?)) (MNNH). Ethiopia: Meneghetti, Dire Dawa, 16.vii.1942, 1 ♂, (no collector) (MNNH); Mulu above Muger Valley circa 8 000 ft, 18–23.xii.1926, 1 ♂, (Dr H. Scott) (MNNH).

The ♂ type from Syria was damaged and incomplete ventrally but the aedeagus is complete; all parts are now mounted in canada balsam on a microscope-slide.

The last specimen is labelled '*Aulacoderus alitiensis* var. nov. *breveapicalis*' in Pic's handwriting. The species is described from Ethiopia (Pic 1897a) and the variety from Ethiopia, Mulu above Muger Valley (Pic 1951). The variety differs from the species by darker markings on the elytra. The author has only seen a ♀ of *A. (A.) alitiensis* Pic and judging from the external features it is not impossible that it is the same species as *A. (A.) peyroni* Pic. However without having seen a ♂ of *A. (A.) alitiensis* opinion must be reserved. The specimen differs from *A. (A.) peyroni* Pic by its more progressive pigmentation. The aedeagus (Fig. 435), the retracted segment and the spiculum gastrale are more sclerotized than in the type specimen from Syria. The structure of the genitalia is essentially the same.

Fig. 436 shows the aedeagus of the specimen from Ethiopia, Meneghetti in lateral view. The connecting membrane is everted and reflexed along the ventral side of the tegmen. This makes the median lobe project beyond the apex of the tegmen. From the position of the connecting membrane it can be seen that this movement can still proceed which would bring the median lobe another 0,1 mm more distal, so that the genital opening is exposed well beyond the apex of the tegmen. This process is a modification of the eversion as it occurs in the Albitarsis Group, but it achieves the same result.

SECTION 18

In the two species of this section the median lobe of the aedeagus is membranous but has a sclerotized transverse base. The genital opening is elongate and has a beaded margin. There is no sclerotized longitudinal spike.

The connecting membrane is attached to the sclerotized base and, as in the species of Section 17, folds double along the ventral side of the aedeagus when eversion takes place (Fig. 444).

The two species are very similar; they both occur in the Mediterranean area but *A. (A.) funebris* mainly occurs round the Adriatic Sea and *A. (A.) sulcithorax* occurs more eastward in Israel and Syria.

Key to the species of Section 18

- 1 Last exposed abdominal sternum of male with two spines on each side of the round apical indentation (Fig. 443) *sulcithorax*
 — Last exposed abdominal sternum of male with three spines on each side of the bluntly pointed apex (Fig. 448) *funebris*

Anthicus (Aulacoderus) sulcithorax Desbr., Figs 440–443

Anthicus (Aulacoderus) sulcithorax Desbrochers, 1875: 46

Size. Length 2,18 mm (1,87–2,40); width over broadest part of elytra 0,87 mm (0,72–0,95).

Head (Fig. 442). Glossy, dark testaceous to black; posterior arch broadly round; punctures fine and sparse with fine grey procumbent hairs. Eyes rather small and hardly bulging.

Prothorax (Fig. 442). Glossy, testaceous to black with a lighter base; broader than long, as broad as head; shoulders sloping and round; punctures fine, somewhat closer than on head with grey recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, connected by a well marked basal dorsal transverse groove.

Elytra. Glossy, dark testaceous to black, in some specimens lighter than prothorax; punctures fine with recumbent hairs slightly longer than on prothorax but still rather short.

Wings. Fully developed.

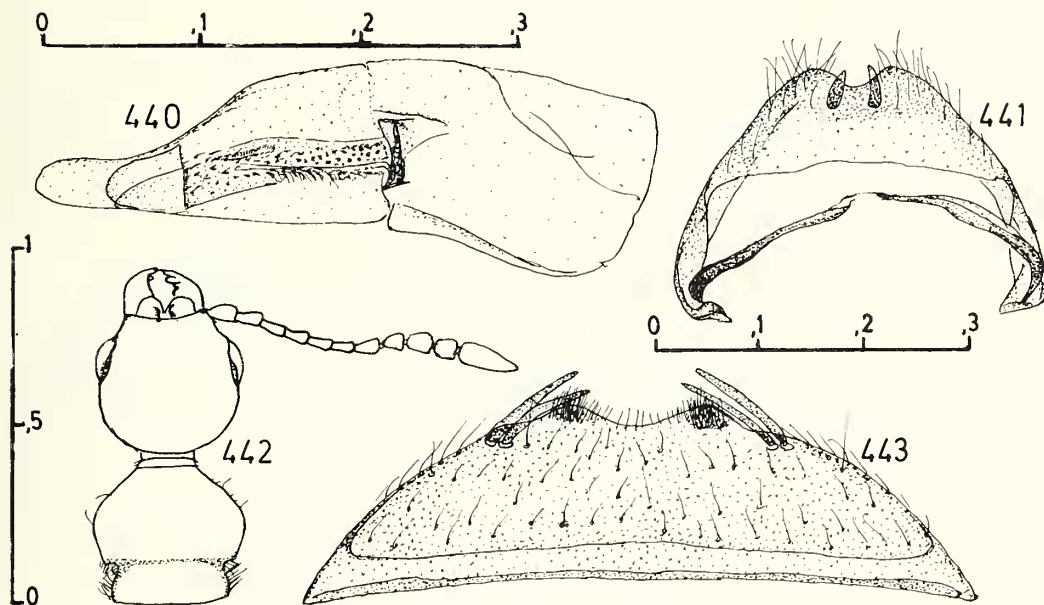
Antennae (Fig. 442). Slender, testaceous to very dark testaceous; apical segments little broader and darker in the lighter coloured specimens; apical segment longer than two preceding ones together.

Legs. Testaceous to dark testaceous; tibiae and tarsi lighter.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 440); median lobe membranous except for a dark basal plate; with elongate genital opening with beaded margin; connecting membrane with dark pustules at base of membranous part of median lobe and small hooks in the more distal region; tegmen lightly sclerotized, apical piece longer than basal piece. Retracted segment (Fig. 441): tergum indented at apex with short thick spine on each side; sternum consists of pair of narrow sclerites, connected to each other by a few fine strands. Last exposed sternum (Fig. 443) with shallow apical indentation and on each side a tuft of close hairs and two long spines pointing inward.

MATERIAL EXAMINED. Israel: Jericho, vii–viii.1929, 2 ♂♂, R. F. Heberdey det., (I. Tapuschi) (NMW); Jericho, no date, 1 ♀, Kreckich det., (no collector) (NMW); Jericho, 27.iv.1933, 1 ♂, 3 ♀♀, (C. Koch) (NMW); Jericho, no date, 2 specimens, Pic, det., (no collector) (NMW); Jerusalem, 10.iv.1931, 1 specimen, (F. S. Bodenheimer) (NMW); Jerusalem, no date, 1 specimen, (Reitter) (NMW); Mikve Israel, 1931, 1 specimen, (F. S. Bodenheimer) (NMW); Jericho, 6.viii.1929, 1 ♀, (I. Tapuschi) (BMNH); Jerusalem, 10.vi.1931, 2 ♂♂ Heberdey det., (F. S. Bodenheimer) (BMNH). Crete: no date, 1 specimen, (Paganetti) (NMW).



Figs 440-443. *A. (A.) sulcithorax* Desbr. 440: aedeagus. 441: retracted abdominal segment of male. 442: head and prothorax. 443: last exposed abdominal sternum of male.

Anthicus (Aulacoderus) sulcithorax subsp. nov. *melitensis* (Pic)

Anthicus (Aulacoderus) melitensis Pic, 1903c: 139

In size and structure this subspecies agrees with *A. (A.) sulcithorax* Desbr. but the colour is different. Head is black but prothorax is brightly reddish testaceous; basal two segments and apical 3-4 segments of antennae are darker than the testaceous middle segments.

MATERIAL EXAMINED. Malta: 1903, 1 ♂, 1 ♀, (M. C.) (BMNH).

Anthicus (Aulacoderus) funebris (Reitt.), Figs 444-448

Tomoderus (?) funebris Reitter, 1884: 257

Anthicus (Aulacoderus) sulcatus Pic, 1897a: 75

Size. Length 2,11 mm (1,87-2,30); width over broadest part of elytra 0,86 mm (0,80-0,92).

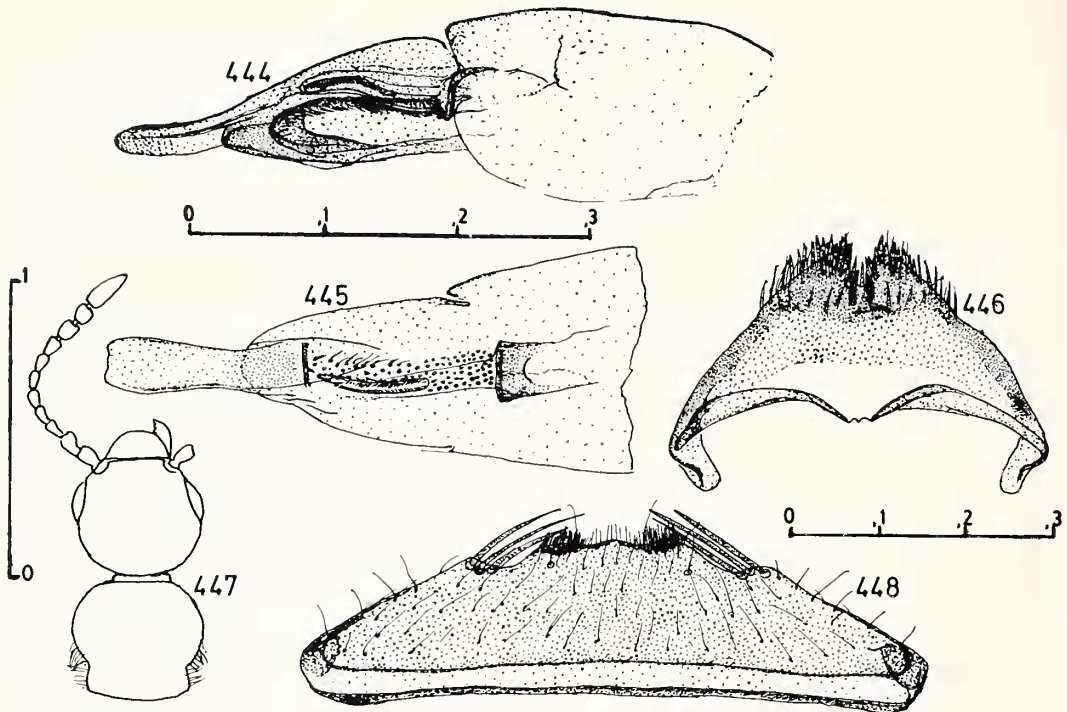
Head. (Fig. 447). Glossy, dark testaceous to black; posterior arch broadly round; punctures very fine and sparse with grey procumbent hairs. Eyes rather small and little bulging.

Prothorax (Fig. 447). Glossy, dark testaceous to black; broader than long, as broad as head; shoulders round; punctures as on head with recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, well supplied with hairs and connected by a dorsal transverse groove.

Elytra. Glossy, dark testaceous to black; rather broad and short; punctures more distinct than on prothorax, hairs longer and recumbent; in male with short round apical notch.

Wings. Fully developed.

Antennae (Fig. 447). Dark testaceous; five apical segments gradually broader; last segment as long as two preceding ones together.



Figs 444-448. *A. (A.) funebris* (Reitt.). 444: aedeagus, partly everted, side view. 445: aedeagus, inverted, dorsal view. 446: retracted abdominal segment of male. 447: head and prothorax. 448: last exposed abdominal sternum of male.

Legs. Testaceous to dark testaceous, distal parts somewhat lighter.

Undersurface. Testaceous to dark testaceous, thoracic parts lighter than abdomen.

Male abdomen. Aedeagus (Fig. 445): median lobe sclerotized at base, apical part membranous with elongate genital opening with beaded margin; connecting membrane surrounding membranous part of median lobe, with small pustules and distally with a lateral row of hairs or fine spines on each side; tegmen little sclerotized, apical piece slightly longer than basal piece; Fig. 444 shows aedeagus in lateral view partly everted; connecting membrane folds double along ventral side of aedeagus, resembling the method of eversion as seen in the species of Section 17. Retracted segment (Fig. 446): tergum apically indented with several short spines which become thinner and more hairlike toward the sides and a pair of dark short spines at base of median apical indentation; sternum consists of a pair of slender sclerites, apically connected by a fine strand. Last exposed sternum (Fig. 448) with on each side of apex a dense tuft of spiny hairs which in the median area go over into thinner hairs; on each side three inward pointing spines.

MATERIAL EXAMINED. Yugoslavia: Dalmatia, I. Lissa, (no date) 1 specimen, (no collector) (NMW); Dalmatia, Zara, (no date), 1 specimen, (no collector) (NMW); Dalmatia, Spalato (now Split) (no date), 1 specimen, (Karaman) (NMW). Albania: Elbasan, (no date), 5 specimens, (Mader) (NMW); Vorra, (no date), 1 specimen, (Mader) (NMW); Durazzo, Ravasini, Lona, (no date), 1 specimen, (NMW). Italy: Lesina, 1914, 11 specimens, (Horv.) (NMW); I.

Curzola, vii.1913, 1 specimen, (Mussapp) (NMW); Comisa, vii.1909, 2 specimens, (NMW). A number of these specimens are labelled '*A. funebris* det. v. Krekich'.

In addition a specimen labelled Greece, Corfu, (no date) *A. sulcatus* Pic (1897a) type ♂, (MNHN) has been examined. According to the description this species differs from *A. (A.) funebris* (Reitt.) in the shape of the prothorax which is somewhat angular and has a deeper transverse basal groove. The author cannot see that the prothorax of this specimen differs from that of *A. (A.) funebris* and the male genitalia are identical. It is concluded that *A. (A.) sulcatus* Pic is a synonym of *A. (A.) funebris* (Reitt.). The name *A. (A.) sulcatus* should be discarded.

SECTION 19

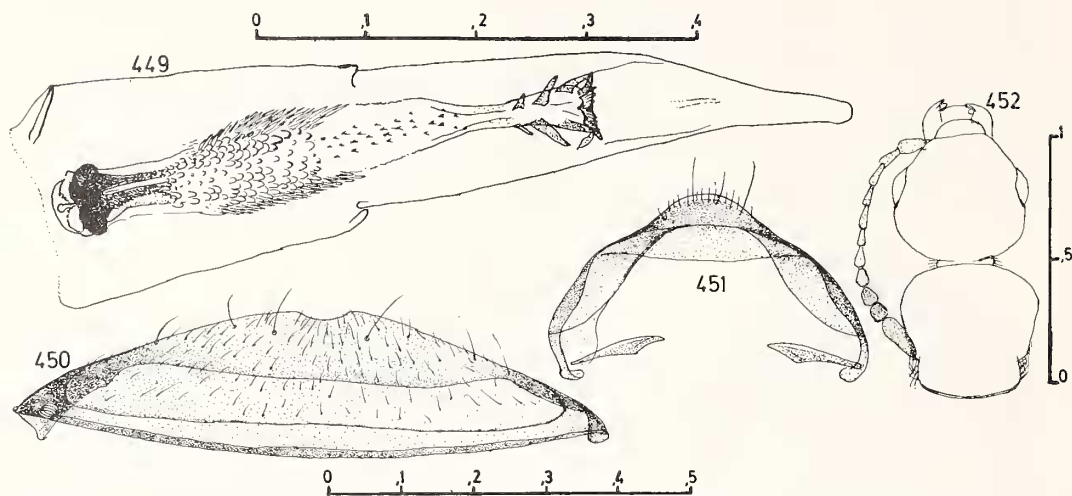
The species of this section do not form a group of related species but are species that do not fit into the other sections. The structure of the aedeagus is aberrant; the position of the genital opening is in most cases not obvious and the median lobe is in some cases reduced. There are spines and sclerotized papillae that are difficult to interpret.

The work was made difficult by the fact that in most cases little material was available, often only one or two specimens, on loan from various museums.

One of the species is from South Africa, one from South West Africa, two from the Canary Islands and the other seven from North Africa.

Key to the species of Section 19

1. Apical piece of tegmen of aedeagus longer than basal piece 2
- Apical piece of tegmen of aedeagus as long as or shorter than basal piece 4
2. Apical piece of tegmen of aedeagus without apical or subapical spines (Fig. 449)
..... *canariensis*
- Apical piece of tegmen of aedeagus with apical or subapical spines 3
3. Apical piece of tegmen of aedeagus with one pair of subapical spines (Fig. 453)
..... *scydmaenoides*
- Apical piece of tegmen of aedeagus with more than 20 subapical spines (Fig. 455) ...
..... *inoblitus*
4. Apical piece of tegmen of aedeagus with a number of spines or papillate sclerotiza-
tions (Figs 459, 464 and 469) 5
- Apical piece of tegmen of aedeagus without spines or sclerotized structures 7
5. Last exposed abdominal sternum of male indented at apex 6
- Last exposed abdominal sternum of male not indented at apex (Fig. 461) *techowi*
6. Sclerites forming sternum of retracted abdominal segment of male with fringe of stiff
recumbent hairs (Fig. 466) *obockianus*
- Sclerites forming sternum of retracted abdominal segment of male with 4–5 apical
spines (Fig. 472) *ganglbaueri*
7. Elytra dark testaceous or black with one or two pairs of distinct light maculae 8
- Elytra not dark with distinct light maculae 9
8. Elytra dark testaceous with two pairs of light maculae *lyonychoides*
- Elytra black with one pair of round light maculae behind the middle (Fig. 474)
..... *platypennis*
9. Tegmen of aedeagus ending in two points; median lobe very slender (Fig. 484) *picheyrei*
- Tegmen of aedeagus ending in a single point 10
10. Median lobe of aedeagus with two pairs of broad spines (Fig. 485) *sulcifer*
- Median lobe of aedeagus with 6 spines of different length, one of which is forked at
apex (Fig. 490) *sefrensis*



Figs 449–452 A. (*A.*) *canariensis* Woll. 449: aedeagus. 450: last exposed abdominal sternum of male. 451: retracted abdominal segment of male. 452: head and prothorax.

Anthicus (Aulacoderus) canariensis Woll., Figs 449–452

Anthicus (Aulacoderus) canariensis Wollaston, 1864: 523–524

Size. Length 2,50 mm (2,20–2,82); width over broadest part of elytra 0,87 mm (0,75–1,00).

Head (Fig. 452). Glossy, dark testaceous to black; posterior arch broadly round; punctures fine with fine hairs directed transversely outwards, except on anterior quarter where they are procumbent. Eyes small, hardly bulging.

Prothorax (Fig. 452). Glossy, dark testaceous to black, with lighter posterior margin; as long as broad, as broad as head; shoulders round; lateral constrictions not prominent but with some long hairs, connected by shallow transverse dorsal groove; punctures somewhat coarser than on head, hairs recumbent.

Elytra. Somewhat glossy, testaceous with darker line along median suture and a less dark marginal line along posterior three-fifth; elongate with round shoulders; with fine and rather close punctures with regular short recumbent hairs. Male apical notch short and broad.

Wings. Fully developed.

Antennae. (Fig. 452). Testaceous, apical 3–4 segments slightly darker and broader; apical segment longer than two preceding ones together.

Legs. Testaceous, coxae and distal half of femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 449): median lobe: genital opening not visible; elongate with several short apical spines and three pairs of longer lateral subapical spines; on the distal half occur a number of small proximally pointing spines or denticles, on the proximal half is an area of round scales which laterally lengthen to distally pointing small spines; this area may be a formation of the connecting membrane which otherwise is not evident; tegmen with bluntly pointed apical piece, one and a half times as long as basal piece. Retracted segment (Fig. 451): tergum rather broad; sternum consists of short narrow sclerites. Last exposed sternum (Fig. 450) with shallow apical indentation.

The hindgut of the dissected specimen was full of pollen.

MATERIAL EXAMINED. Canary Islands: Fuerteventura, Matural, 24.iii.1963, 1 ♂, 2 ♀♀, P. Bonadona det., (Lindberg) (ZSBM).

Anthicus (Aulacoderus) scydmaenoides Woll., Figs 453–454

Anthicus (Aulacoderus) scydmaenoides, Wollaston, 1864: 524–525.

Size. Length 1,83 mm (1,75–1,95); width over broadest part of elytra 0,70 mm (0,67–0,75).

Head. Somewhat glossy, reddish to dark testaceous; posterior arch broadly round; with rather coarse punctures and fine procumbent whitish hairs. Eyes rather small, hardly bulging.

Prothorax. Somewhat glossy, slightly lighter than head; broader than long, almost as broad as head; shoulders round, not sloping; punctures rather coarse, with fine recumbent hairs; lateral constrictions small; dorsal transverse depression hardly noticeable.

Elytra. Somewhat glossy, testaceous, same colour as prothorax; short and rather broad, greatest breadth in front of middle; shoulders sloping; punctures rather coarse with short whitish recumbent hairs.

Wings. Reduced in both sexes.

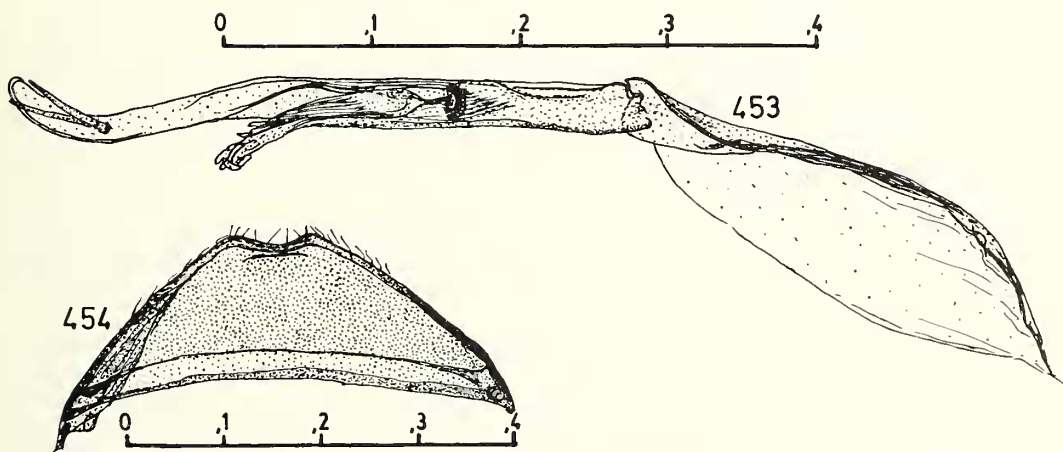
Antennae. Testaceous; apical four segments slightly broader but not darker; apical segment shorter than two preceding ones together.

Legs. Light testaceous to testaceous.

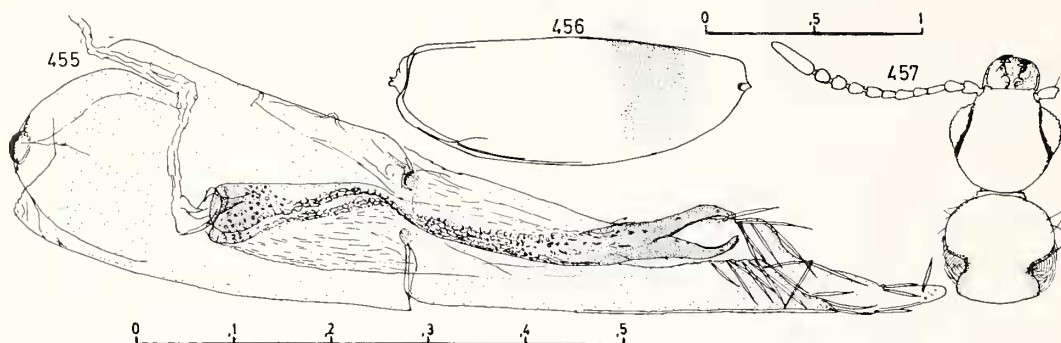
Undersurface. Light testaceous to testaceous.

Male abdomen. Aedeagus (Fig. 453): median lobe short, with some blunt apical and lateral spines, about eight together; genital opening not visible; connecting membrane not clear; tegmen: apical piece with a pair of subapical spines; basal piece shorter than apical piece. Retracted segment: tergum little sclerotized; sternum consisting of a pair of narrow short sclerites. Last exposed sternum (Fig. 454) with shallow apical indentation.

MATERIAL EXAMINED. Canary Islands: 99. 203, 2 ♂♂, 2 ♀♀, (no collector) (HBMNH).



Figs 453–454. A. (*A.*) *scydmaenoides* Woll. 453: aedeagus. 454: last exposed abdominal sternum of male.



Figs 455-457. A. (*A.*) *inoblitus* Krek. 455: aedeagus. 456: elytron of male. 457: head and prothorax.

Anthicus (Aulacoderus) inoblitus Krek., Figs 455-457

Anthicus (Aulacoderus) inoblitus von Krekich, 1913: 96.

Size. Length 2,45 mm (2,15-2,73); width over broadest part of elytra 0,93 (0,80-1,04).

Head (Fig. 457). Glossy, dark testaceous; posterior arch broadly round; punctures hardly visible with dark procumbent hairs. Eyes with dark margin, large and bulging.

Prothorax (Fig. 457). Glossy, light testaceous to testaceous; as long as broad, narrower than head; shoulders round; lateral constrictions at $\frac{2}{3}$ of length of prothorax, connected by transverse dorsal depression; punctures very fine with recumbent hairs as long as on head, but hairs are procumbent behind dorsal basal depression.

Elytra (Fig. 456). Glossy, light testaceous with dark band behind middle; elongate, with fine punctures and recumbent hairs, longer than on prothorax; some erect and semi-erect hairs, especially near lateral margins.

Wings. Fully developed.

Antennae (Fig. 457). Light testaceous; apical four segments slightly broader but not darker; last segment as long as three preceding ones together.

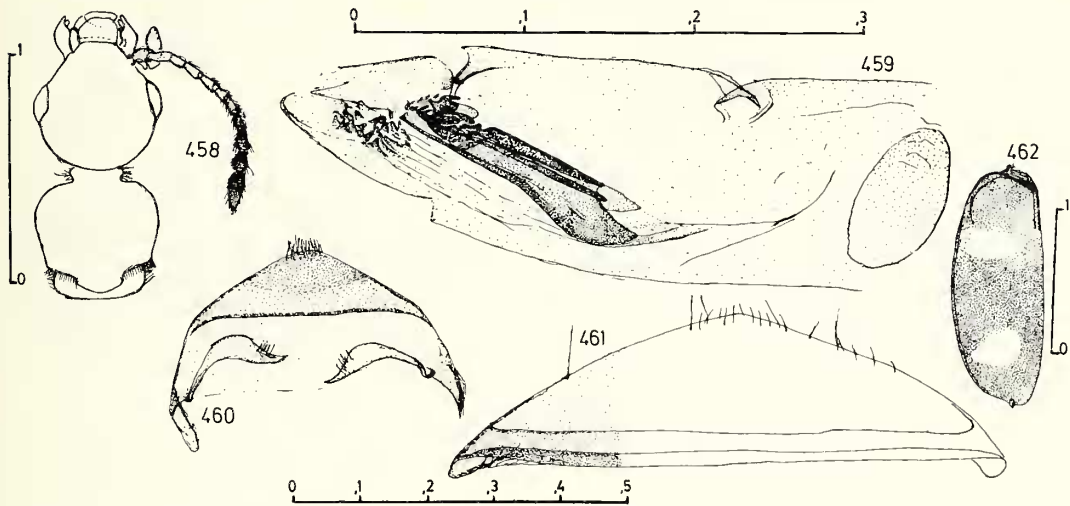
Legs. Light testaceous.

Undersurface. Light testaceous, abdomen somewhat darker.

Male abdomen. Aedeagus (Fig. 455): median lobe pigmented only where it ends in a pair of blunt prongs; genital opening not visible; connecting membrane surrounding base of median lobe, where it is covered by small pustules which distally go over into scales; tegmen with blunt apex with several spines on the lateral margins; apical piece longer than basal piece. Retracted segment: tergum with truncate apex with short hairs; without row of fenestrae but small fenestrae occur spread over the whole surface; sternum consisting of a pair of short narrow triangular plates of which only the proximal margin is well sclerotized. Last exposed sternum with bluntly round apex.

MATERIAL EXAMINED. Niger: Irabellaben Mts, Baguezans, 1 200-1 300 m, 26-31.viii.1947, 1 ♂, Pic. det., (L. Chopard & A. Villiers) (MNHN); Mts Tarraouaji 900 m, 8-12.ix.1947, 4 ♂♂, (L. Chopard & A. Villiers) (MNHN).

Krekich mentions that the ♀ has on the prothorax, on each side a small 'deutlich abstehehendes Zäpfchen' as is also found in *A. bouvieri* and in *A. citernii*. Unfortunately the author has not seen a ♀ of *A. inoblitus* and no specimens of *A. bouvieri*. A ♀ of *A. citernii* has a pointed edge in front of the lateral constrictions of the prothorax which the author assumes to be the 'Zäpfchen' of Krekich. This resembles the point found in the male of *A. lyonychoides* (Fig. 481). In *A. sefrensii* of which Krekich has not seen a female, the side of the prothorax is not pointed in either sex.



Figs 458–462. A. (*A.*) *techowi* Pic. 458: head and prothorax. 459: aedeagus. 460: retracted abdominal segment of male. 461: last exposed abdominal sternum of male. 462: elytron of male.

Anthicus (Aulacoderus) techowi Pic, Figs 458–462

Anthicus (Aulacoderus) techowi Pic, 1913a: 38.

Size. Length 2,43 mm (2,39–2,45); width over broadest part of elytra 0,86 mm (0,80–0,95).

Head (Fig. 458). Glossy, dark testaceous to black; posterior arch broadly round; with fine punctures and fine short procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 458). Slightly glossy, very dark testaceous; as broad as long, slightly narrower than head; shoulders round; with fine punctures and short recumbent hairs; lateral constrictions at $\frac{3}{4}$ of the length of the prothorax, covered by long white hairs and connected by a basal dorsal transverse groove which is covered by a white hairband, interrupted over the median third.

Elytra (Fig. 462). Rather short and broad with well developed shoulders; glossy, very dark testaceous with two pairs of light maculae, the anterior pair not quite reaching the median suture and almost reaching the lateral margins; in some specimens there is an almost complete transverse light band, in others the maculae are placed obliquely, marginal more anterior than median; the posterior pair of maculae smaller and round; finely and densely punctured with short recumbent hairs of the same colour as the area on which they are implanted; the hairs on the median half of the anterior maculae are pointing transversely outwards and those on the lateral half are pointing obliquely outwards and backwards.

Wings. Fully developed.

Antennae (Fig. 458). Testaceous, apical 4–6 segments dark and slightly broader; last segment as long as two preceding ones together.

Legs. Testaceous, femora and tarsi somewhat darker.

Undersurface. Dark testaceous to black.

Male abdomen. Aedeagus (Fig. 459): median lobe short, well sclerotized, ending in a tube and with complicated structures of hooks and sclerites on the ventral side; distal to the median lobe lies a patch with sclerotized papillae or denticles, possibly a formation of the connecting

membrane or the tegmen; tegmen with basal piece three times as long as apical piece. Retracted segment (Fig. 460): tergum with blunt hairy apex and proximal row of fenestrae; sternum consisting of a pair of slender sclerites with some apical hairs. Last exposed sternum (Fig. 461) apically bluntly pointed.

MATERIAL EXAMINED. South Africa: Matjiesfontein [3320BA], 1–18.xii.1928, 1 ♂, 2 ♀♀, (R. E. Turner) (BMNH); Graaff Reinet [3224BC], x.1931, 1 ♀ det. R. F. Heberdey, (Miss A. Mackie) (NMW); Richtersveld, Nabas [2817AD], Malaise Trap, 17–18.ii.1979, 17 ♂♂, 3 ♀♀, (Lamoral, Bampton & Barnley) (AMSA). South West Africa: Okahandja [2116DD], xi.1927–i.1928, 3 ♂♂, 1 ♀, (R. E. Turner) (BMNH); 25 miles west of Helmeringshausen, Barby Farm [2551DC], to light, 17–18.i.1972, 1 ♂, (Southern African Expedition, British Museum) (BMNH); Aus [2616CB], 8–30.xi.1929, 2 ♂♂, 2 ♀♀, (R. E. Turner) (BMNH); 21 miles east of Swakopmund, Goanikontes [2214DB], 30.i.1972, 1 ♀, (Southern African Expedition, British Museum) (BMNH).

Anthicus (Aulacoderus) obockianus Pic, Figs 463–467

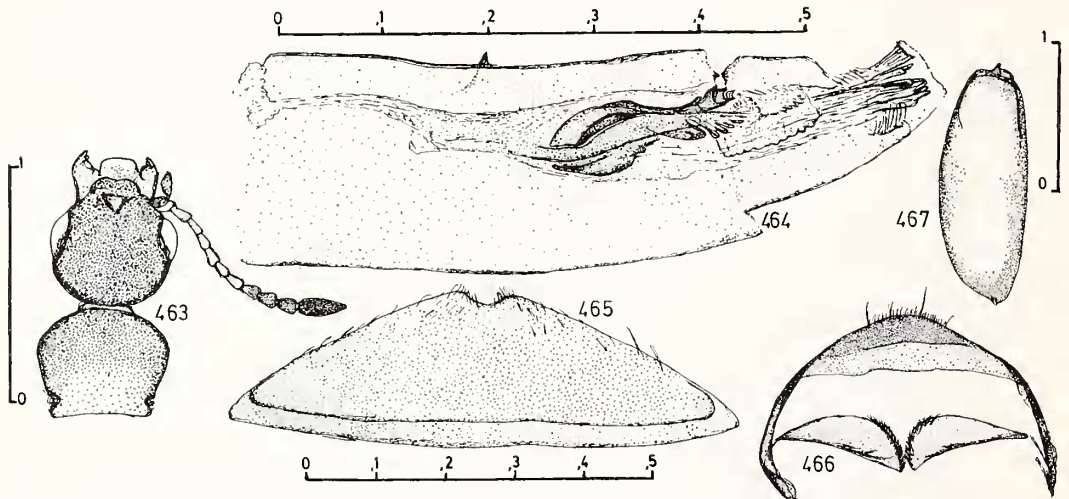
Anthicus (Aulacoderus) obockianus Pic, 1914a: 184

Size. Length 2,61 mm (2,50–2,69); width over broadest part of elytra 0,98 mm (0,92–1,03).

Head (Fig 463). Glossy, dark testaceous; posterior arch broadly round; punctures fine with short procumbent hairs. Eyes hardly bulging.

Prothorax (Fig. 463). Somewhat glossy, slightly lighter than head, with lighter basal area; broader than long, slightly broader than head; shoulders sloping and round; punctures denser than on head with fine recumbent hairs; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax.

Elytra (Fig. 467). Mat, light testaceous with dark margins and dark along median suture, leaving the whole central area light testaceous, but with an indication of coalescence of anterior and posterior maculae; in the male specimen from Assab (or Aseb) there is a transverse



Figs 463–467. A. (*A.*) *obockianus* Pic. 463: head and prothorax. 464: aedeagus. 465: last exposed abdominal sternum of male. 466: retracted abdominal segment of male. 467: elytron of male.

dark bar separating anterior and posterior maculae as in Pic's description; very finely punctured with light recumbent hairs, hardly longer than on prothorax.

Wings. Fully developed.

Antennae (Fig. 463). Testaceous, four apical segments darker but hardly broader; apical segment longer than two preceding ones together.

Legs. Testaceous, coxae and femora slightly darker.

Undersurface. Testaceous.

Male Abdomen. Aedeagus (Fig. 464): median lobe short; genital opening not visible; on either side of median lobe is a dark sclerite which is broad at base and has four folds; these structures may be formations of the connecting membrane; tegmen: apical piece with a number of folds or bars at apex; the homology of these structures is not known; basal piece more than twice as long as apical piece. Retracted segment (Fig. 466): tergum with round apex; sternum consisting of a pair of sclerites with a fringe of recumbent hairs. Last exposed sternum (Fig. 465) with small apical indentation.

MATERIAL EXAMINED. Ethiopia: Katona, Assab (or Aseb), 1907, 1 ♂, 2 ♀♀ Krekich det., (no collector) (NMW); Katona, Gibdo, no date, 1 ♂ (no collector) (NHMP).

Anthicus (Aulacoderus) ganglbaueri Pic, Figs 468–473

Anthicus (Aulacoderus) ganglbaueri Pic, 1900a, 139

Size. Length 2,35 mm (2,22–2,49); width over broadest part of elytra 0,81 mm (0,71–0,91).

Head (Fig. 473). Mat, testaceous; posterior arch broadly round; with fine punctures and short procumbent hairs. Eyes large, not much bulging.

Prothorax (Fig. 473). Mat, testaceous; broader than long, slightly narrower than head; shoulders round; punctures fine, hairs recumbent, longer and coarser than on head; lateral constrictions at $\frac{1}{3}$ of the length of the prothorax, not connected by a transverse dorsal groove.

Elytra (Fig. 468). Mat, very light testaceous with three dark bands: one over the shoulder area, one across the middle and one at the apex; shape broad and flat; punctures very fine, recumbent hairs longer than on prothorax.

Wings. Fully developed.

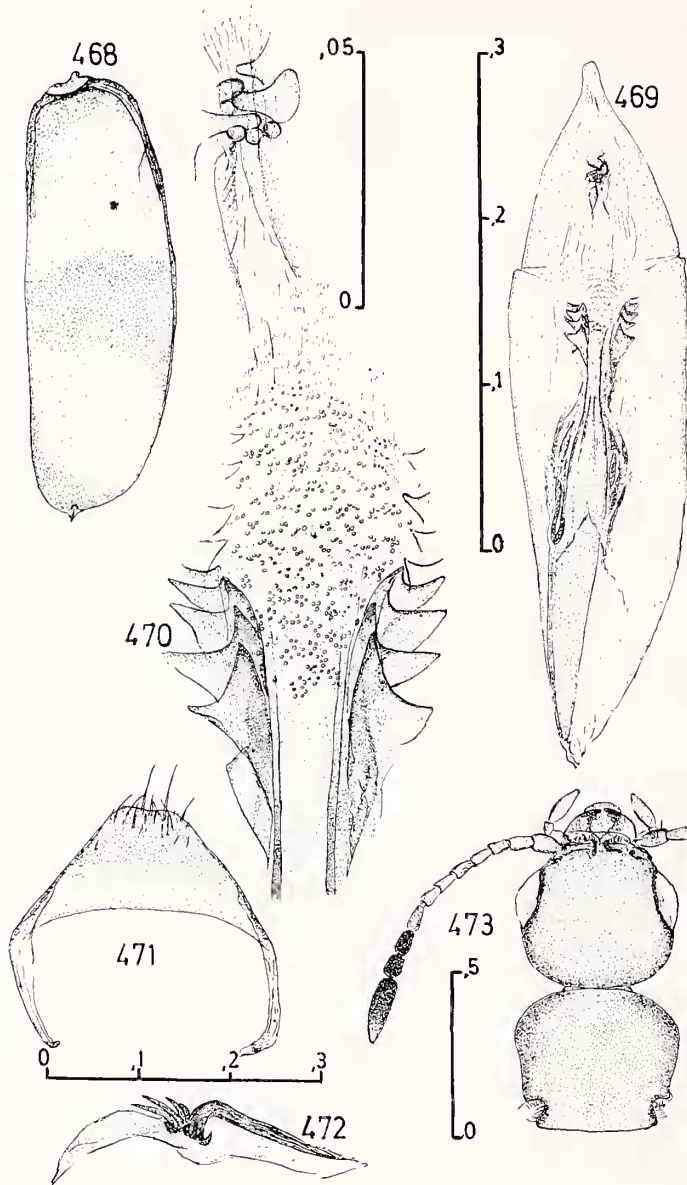
Antennae (Fig. 473). Slender, testaceous; last three segments dark, but not broader; last segment longer than two preceding ones together.

Legs. Testaceous.

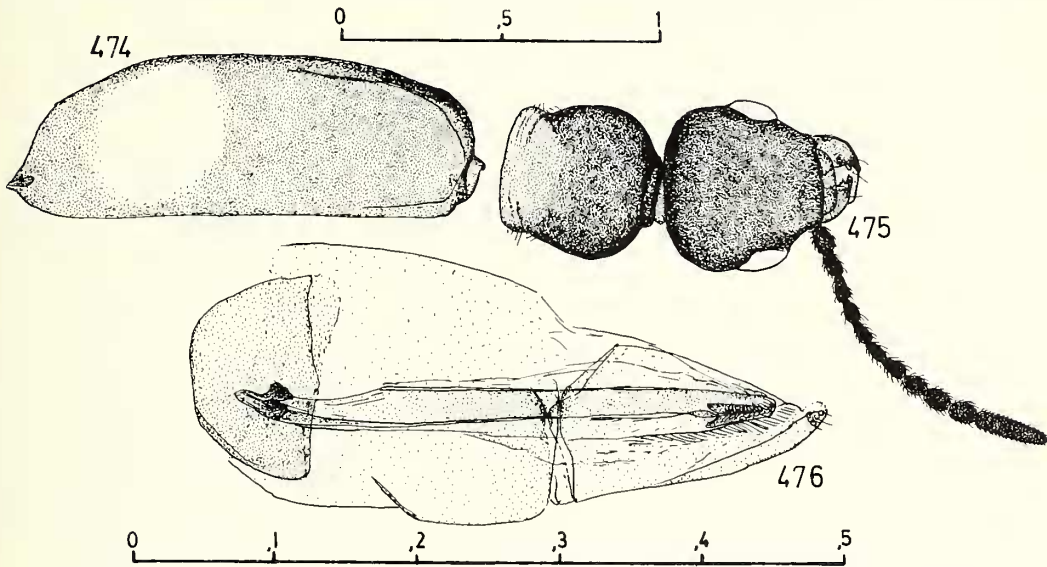
Undersurface. Testaceous; abdomen darker than thorax.

Male abdomen. Aedeagus (Figs 469 and 470): median lobe extends proximally to base of tegmen but distal end and genital opening are not clear; in this region is a set of four pigmented teeth on each side, resembling somewhat those occurring in *A. (A.) obockianus* (Fig. 464); these teeth may be a formation of connecting membrane; more distally the median region has a field of minute papillae with laterally a longitudinal row of pointed structures on each side which are neither pigmented nor sclerotized; distally the papillae fade out but there are even smaller indistinct groups of longitudinal folds; distal to these is a median group of about eight blunt finger-shaped papillae which are somewhat intertwined; they resemble the structures found in *A. (A.) techowi* (Fig. 459); tegmen little sclerotized, basal piece three times as long as apical piece. Retracted segment: tergum (Fig. 471) broad with apical hairs and without row of fenestrae; sternum (Fig. 472) consisting of a pair of slightly sclerotized plates which end in 4–5 pointed claw-like spines. Last exposed sternum very slightly indented at apex.

MATERIAL EXAMINED. Kenya: Tana, 1896, Types 2 ♂♂, Pic det., (no collector) (NMW).



Figs 468-473. A. (*A.*) *ganglbaueri* Pic. 468: clytron of male. 469: aedeagus. 470: detail of middle part of aedeagus. 471: tergum of retracted abdominal segment of male. 472: sternum of retracted abdominal segment of male. 473: head and prothorax.



Figs 474-476. *A. (A.) platypennis* spec. nov. 474: elytron of male. 475: head and prothorax. 476: aedeagus.

Anthicus (Aulacoderus) platypennis spec. nov., Figs 474-476

Size. Length 2,34 mm (2,12-2,45); width over broadest part of elytra 0,93 mm (0,85-1,00).

Head (Fig. 475). Glossy, black; posterior arch broad; punctures fine with procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 475). Somewhat glossy, black; longer than broad, narrower than head; shoulders sloping and round; punctures as on head with recumbent hairs; lateral constrictions at $\frac{1}{4}$ of the length of the prothorax, small, with a few short hairs.

Elytra (Fig. 474). Glossy, dark testaceous to black, with a pair of light round maculae on posterior half; flat in shape (i.e. hardly convex); punctures fine with recumbent darkish hairs, somewhat lighter on the maculae; with a few erect hairs. Male with distinct apical point and elongate dark notch.

Wings. Fully developed.

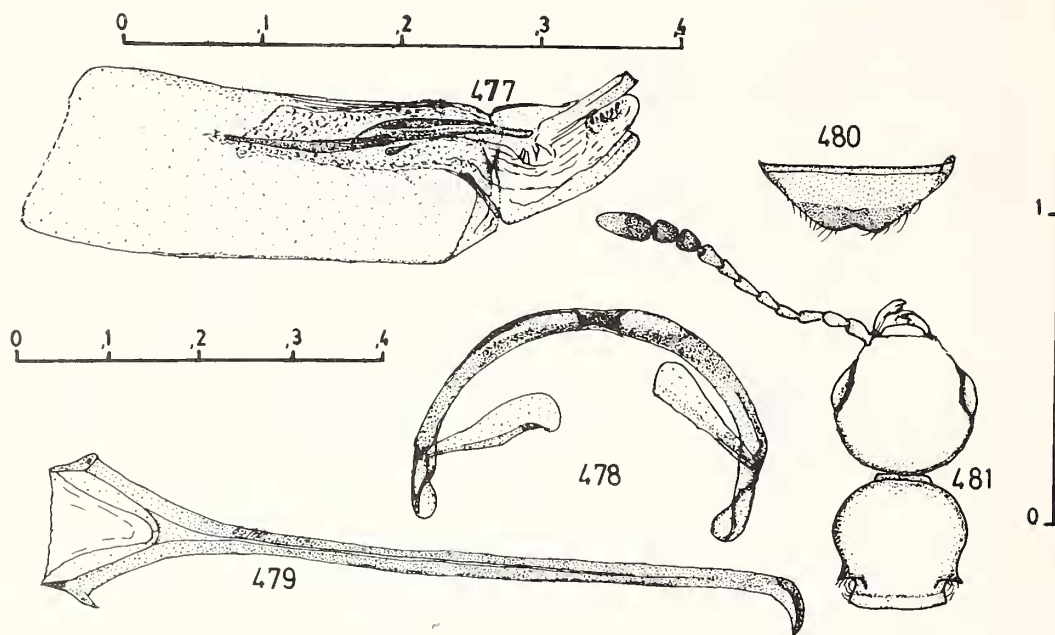
Antennae (Fig. 475). Very dark testaceous to black; apical segments hardly broader; last segment as long as two and a half of the preceding segments.

Legs. Dark testaceous.

Undersurface. Very dark testaceous; metasternum rather long.

Male abdomen. Aedeagus (Fig. 467): median lobe slender and straight with a pair of dark lobed tuberosities at base; genital opening with beaded margin and a dark elongate triangular sclerite on each side; connecting membrane without armature; tegmen lightly sclerotized: apical piece ending in a blunt dorsal point with a few apical hairs; basal piece one and a half times as long as apical piece. Retracted segment: tergum darkly pigmented with shallow apical indentation and transverse row of fenestrae directly distal to the well sclerotized proximal margin; sternum consisting of a pair of dark, rather broad triangular plates which overlap in the middle. Last exposed sternum with shallow apical indentation.

MATERIAL EXAMINED. South Africa: Willowmore [3323AD], no date, Holotype ♂, Paratypes 2 ♂♂, (Dr H. Brauns) (AMSA).



Figs 477-481. A. (*A.*) *lyonichoides* Kolbe. 477: aedeagus. 478: retracted abdominal segment of male. 479: spiculum gastrale of male. 480: last exposed abdominal sternum of male. 481: head and prothorax.

Anthicus (Aulacoderus) lyonichoides Kolbe, Figs 477-481

Anthicus (Aulacoderus) lyonichoides Kolbe, 1883: 278

Size. Length 2.20 mm; width over broadest part of elytra 0.80 mm.

Head (Fig. 481). Glossy, dark testaceous to black; posterior arch broadly round; punctures fine with short procumbent hairs. Eyes slightly bulging.

Prothorax (Fig. 481). Somewhat glossy, dark testaceous to black; as broad as long, narrower than head; shoulders sloping and round; punctures closer than on head with recumbent hairs; lateral constrictions at $\frac{2}{3}$ of the length of the prothorax, sharply marked anteriorly by overhanging points.

Elytra. Glossy, dark testaceous with two pairs of light testaceous maculae, reaching lateral margins but not median suture; punctures fine with fine light recumbent hairs and some erect hairs along median suture and lateral margins.

Wings. Fully developed.

Antennae (Fig. 481). Light testaceous, apical five segments progressively broader and darker; last segment longer than two preceding ones together.

Legs. Dark testaceous, tarsi lighter.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 477): median lobe short and slender; genital opening apical, with finely beaded margin; connecting membrane with a longitudinal field of minute denticles; tegmen: apical piece short ending in a blunt central lobe and a pair of side lobes of equal length; basal piece more than three times as long as apical piece. Retracted segment (Fig. 478): tergum narrow and semi-circular with sharply marked darker median area; sternum consisting

of a pair of thin narrow plates. Spiculum gastrale (Fig. 479) long and Y-shaped, each of the Y-arms ending in two points. Last exposed sternum (Fig. 480) apically indented.

MATERIAL EXAMINED. Guinea: Chinchovo, no date, Type ♂, Kreckich det., (no collector) (NMW).

Anthicus (Aulacoderus) picheyrei Peyerimhoff, Figs 482–484

Anthicus (Aulacoderus) picheyrei Peyerimhoff, 1943: 16

Aulacoderus manzer Bonadona 1964: 242–244

Size. Length 2,04 mm (1,85–2,30); width over broadest part of elytra 0,80 mm (0,74–0,88).

Head (Fig. 482). Glossy, testaceous to dark testaceous; posterior arch broadly round; punctures fine and sparse with fine grey procumbent hairs. Eyes large and bulging, darkly margined, with rather large ommatidia.

Prothorax (Fig. 482). Glossy, testaceous; broader than long, narrower than head; punctures fine and sparse with fine grey recumbent hairs; lateral constrictions at $\frac{2}{3}$ of length of prothorax, very prominent and connected by a deep dorsal transverse groove with short hairs.

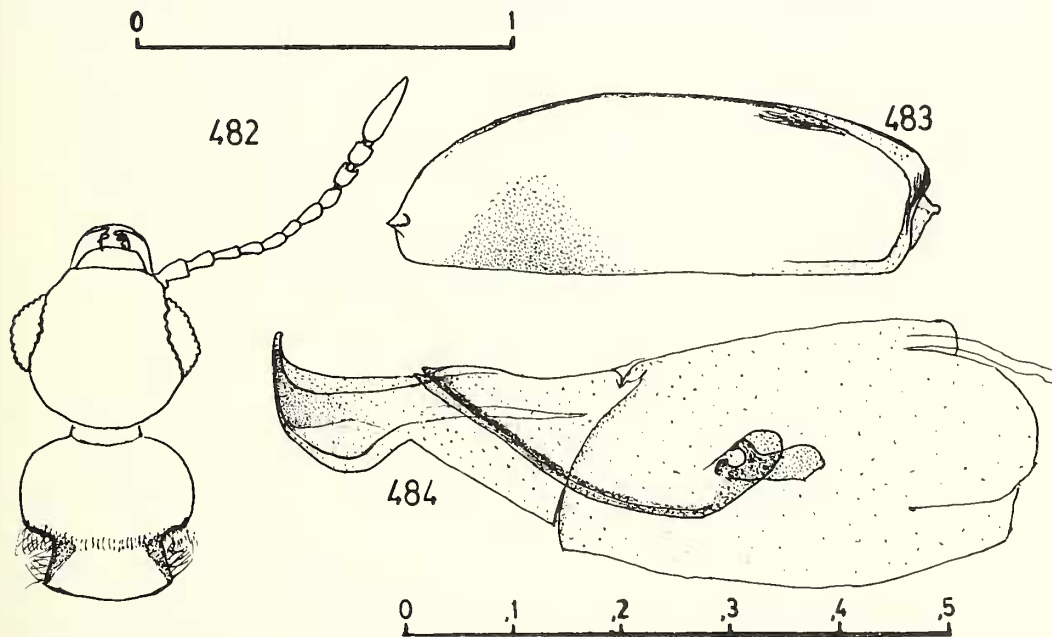
Elytra (Fig. 483). Glossy, light testaceous with a single dark mark at posterior quarter at median suture, not reaching lateral margins; punctures fine with recumbent hairs, slightly longer than on prothorax.

Wings. Fully developed.

Antennae (Fig. 482). Testaceous, apical segments not darker and hardly broader; last segment longer than two preceding ones together.

Legs and undersurface. Light testaceous.

Male abdomen. Aedeagus (Fig. 484): median lobe consists of a small short sclerite and a



Figs 482–484. A. (*A. picheyrei* de Peyerimhoff. 482: head and prothorax. 483: elytron of male; 484: aedeagus.

long narrow strand which seems to be fused at its tip to the apical piece of tegmen; perhaps this strand represents connecting membrane of which there is no other evidence; tegmen with basal piece somewhat longer than apical piece which ends in a pair of curved dorsally pointing hooks. Retracted segment: tergum narrow and horseshoe-shaped; sternum consists of a pair of short narrow plates which are hardly sclerotized. Last exposed sternum with round apex.

MATERIAL EXAMINED. Algeria: Tamanrasset, Hoggar, ix.1941, Type ♂, (Dr Picheyre) (MNHN). Somali Republic: probably Dudar, 8 miles south of Berbera, x.1932, 2 ♂♂, (W. A. MacFadyen) (BMNH). Cameroun: Marona, x-xi.1956, 3 specimens, (G. Schmitz) (MRAC).

Aulacoderus manzer Bonadona, 1964, is described from the Sudan; Type ♂ (MNHN), Bigor Nohr. From the description and text figures it is obvious that *Aulacoderus manzer* is a synonym of *Anthicus (Aulacoderus) picheyrei* Peyerimhoff.

Anthicus (Aulacoderus) sulcifer Pic, Figs 485-488

Anthicus (Aulacoderus) sulcifer Pic, 1893: 54

Size. Length 2,25 mm (2,00-2,50); width over broadest part of elytra 0,83 mm (0,80-0,85).

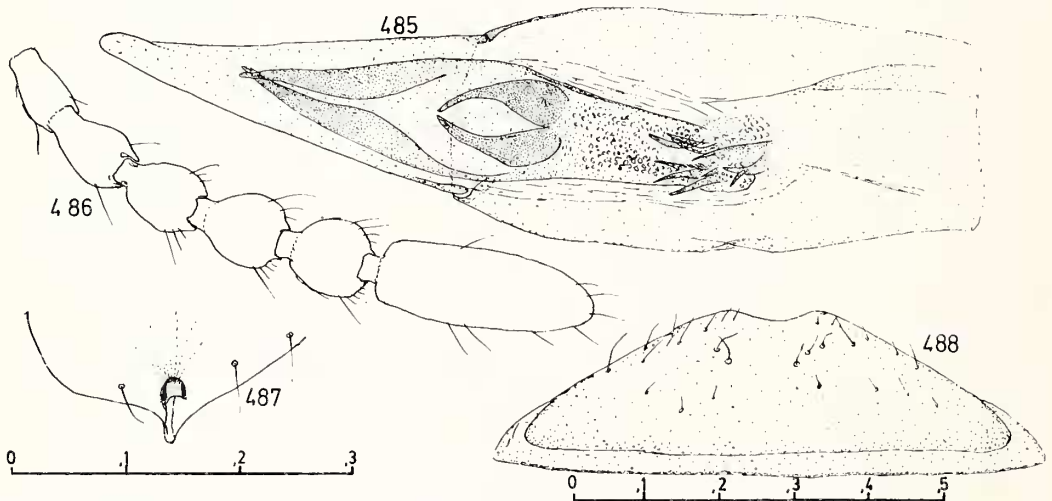
Head. Glossy, dark testaceous to black; posterior arch broadly round; punctures fine with fine procumbent hairs. Eyes large and bulging.

Prothorax. Glossy, dark testaceous with lighter posterior region; broader than long, narrower than head; punctures fine with recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of prothorax, connected by hairy dorsal transverse groove which separates the anterior region of the prothorax sharply from the posterior part.

Elytra. Somewhat glossy, dark testaceous on anterior half with transverse light band in the middle which extends forward along median suture; posterior area not as dark as anterior region; punctures distinct with recumbent hairs longer than those on prothorax. Male with rather elongate apical point with short notch (Fig. 487).

Wings. Fully developed.

Antennae (Fig. 486). Testaceous to dark testaceous; apical four segments somewhat dark-



Figs 485-488. A. (*A.*) *sulcifer* Pic. 485: aedeagus. 486: apex of antenna. 487: apex of elytron of male. 488: last exposed abdominal sternum of male.

er but not broader; last segment longer than the two preceding ones together, with almost parallel sides and blunt apex.

Legs. Testaceous, femora darker.

Undersurface. Dark testaceous.

Male abdomen. Aedeagus (Fig. 485): median lobe with a pair of long apical spines, a pair of shorter broader spines half-way along length and at base a group of about five short spines on each side; genital opening not visible; connecting membrane, surrounding base of median lobe, with small pustules; the scaly area on the proximal half of median lobe may also belong to connecting membrane; tegmen: apical piece with bluntly pointed apex; basal piece longer than apical piece. Retracted segment: tergum little sclerotized; sternum consists of a pair of long narrow sclerites. Last exposed sternum (Fig. 488) with shallow apical indentation.

MATERIAL EXAMINED. Algeria: Sahara, N. of El Golea, v.1912, 2 ♂♂, Krekich det., (Herbert & Hilg) (BMNH).

Anthicus (Aulacoderus) sefrensis Pic, Figs 489–490

Anthicus (Aulacoderus) sefrensis Pic, 1894b: 78

Size. Length 2,54 mm (2,30–2,78); width over broadest part of elytra 0,93 mm (0,78–1,04).

Head (Fig. 489). Glossy, dark testaceous to black; slender; posterior arch broadly round; with very fine punctures with short procumbent hairs. Eyes large and bulging.

Prothorax (Fig. 489). Somewhat glossy, testaceous; broader than long, as broad as head; shoulders sloping and round; punctures very fine with fine recumbent hairs, slightly longer than on head; deep lateral constrictions at $\frac{2}{3}$ of length of prothorax with long fine hairs and connected by dorsal transverse groove.

Elytra. Glossy, light testaceous to testaceous; usually somewhat darker on shoulder region and with dark transverse band, well behind middle; dark markings may be almost or completely absent in regressively coloured specimens; with very fine punctures with recumbent hairs, longer than on prothorax.

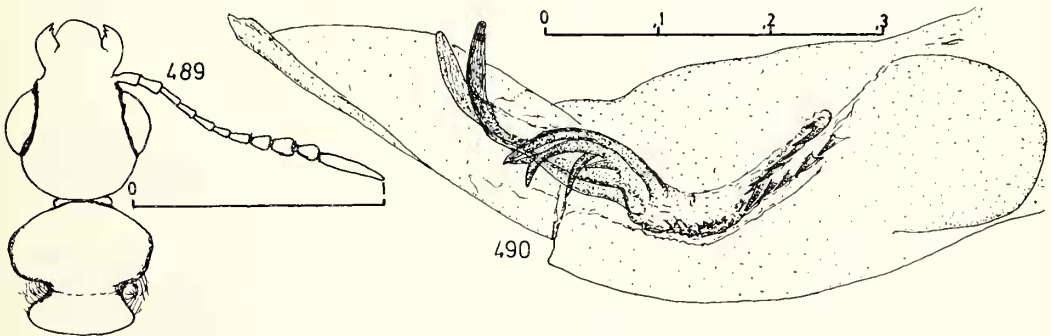
Wings. Fully developed.

Antennae (Fig. 489). Slender, testaceous; apical segments not darker but slightly broader; last segment as long as three preceding segments together.

Legs. Light testaceous.

Undersurface. Testaceous.

Male abdomen. Aedeagus (Fig. 490): median lobe with two blunt apical spines and four



Figs 489–490. A. (*A.*) *sefrensis* Pic. 489: head and prothorax. 490: aedeagus.

spines of different length in middle region of which one is forked; genital opening not visible; connecting membrane with some rather irregularly arranged teeth near attachment to base of median lobe; these teeth go over distally in a row of sclerotizations of indefinite shape; tegmen: basal piece one and a half times as long as apical piece. Retracted segment: tergum with flat apex; sternum consisting of a pair of thin plates. Last exposed sternum with flat apex.

MATERIAL EXAMINED. Southern Algeria: Ain Sefra, v.1896, 20 specimens, C. Koch det., (Dr A. Chobaut) (ZSBM).

This is not part of the Type material which was collected by M. Henon in 1893 at the same locality.

SPECIES OF WHICH INSUFFICIENT MATERIAL WAS AVAILABLE FOR A COMPLETE DESCRIPTION

It was not possible to give a complete description of the following species because no male specimens were available for dissection. These species could therefore not be incorporated in the previous sections.

Anthicus (Aulacoderus) alitiensis Pic

Anthicus (Aulacoderus) alitiensis Pic, 1897a: 27

Size. Length 2,62 mm; width over broadest part of elytra 0,87 mm.

Head. Dark reddish testaceous; posterior arch broadly round; punctures rather coarse with short light procumbent hairs. Eyes bulging.

Prothorax. Glossy, reddish testaceous, lighter than head; as broad as long, slightly narrower than head; shoulders sloping, somewhat round; punctures closer and finer than on head with short light recumbent hairs; lateral constrictions between posterior third and quarter, with long light hairs and connected by a dorsal transverse depression parallel to base.

Elytra. Glossy, slightly lighter than prothorax; darker over shoulder region and with darker transverse band behind middle which is broadest at median suture, narrowing to lateral margins; punctures rather dense with light hairs which are longer than those on prothorax.

Wings. Fully developed.

Antennae. Reddish testaceous; apical three segments slightly broader but not darker; last segment as long as two preceding ones together.

Legs. Reddish testaceous.

Undersurface. Same colour as prothorax.

MATERIAL EXAMINED. Ethiopia: Alitiena, no date, Type ♀, (no collector) (MNHN).

Anthicus (Aulacoderus) anteapicalis, Pic

Anthicus (Aulacoderus) anteapicalis, Pic, 1938b: 71

Size. Length 2,75 mm; width over broadest part of elytra 1,02 mm.

Head. Glossy, black; posterior arch straightly transverse with round corners toward eyes; punctures fine with short light procumbent hairs. Eyes bulging.

Prothorax. Glossy, black, testaceous at base; broader than long, as broad as head; shoulders angular, each with an erect lateral hair; punctures closer than on head with recumbent hairs; lateral constrictions at $\frac{1}{3}$ of length of prothorax, with long hairs and connected by shallow dorsal transverse depression.

Elytra. Glossy, dark testaceous with two pairs of light maculae: anterior pair transverse, roughly rectangular, posterior pair small and indistinct; area between anterior and posterior maculae less dark than shoulder area; punctures fine with fine recumbent hairs and some erect hairs; on lateral half of anterior maculae is a patch of light hairs pointing obliquely outwards and backwards.

AULACODERUS LA FERTE, A SUBGENUS OF ANTHICUS PAYKULL (COLEOPTERA: ANTHICIDAE)

Wings. Fully developed.

Antennae. Dark testaceous, apical four segments darker and broader; last segment as long as two preceding ones together.

Legs. Dark testaceous, tibiae and tarsi lighter.

Undersurface. Dark testaceous.

MATERIAL EXAMINED. Basutoland (now Lesotho): no date, Type ♀, (no collector) (MNHN).

Anthicus (Aulacoderus) collarti Pic

Anthicus (Aulacoderus) collarti Pic, 1938a: 19

Size. Length 2,51 mm; width over broadest part of elytra 0,95 mm.

Head. Glossy, reddish testaceous; posterior arch broadly round; punctures fine with short light procumbent hairs. Eyes bulging.

Prothorax. Slightly lighter than head; broader than long, almost as broad as head; shoulders sloping and round; punctures fine with fine light recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of the prothorax, with long hairs and connected by a dorsal transverse depression.

Elytra. Light testaceous, dark over shoulder area and dark transverse band at apical quarter; middle area and apex light; punctures close with light recumbent hairs, slightly longer than those on prothorax.

Wings. Fully developed.

Antennae. Testaceous, apical four segments broader but not darker; last segment slightly longer than two preceding segments together.

Legs. Testaceous.

Undersurface. Testaceous, same colour as prothorax.

MATERIAL EXAMINED. Congo (now Zaire): Atshor à Tido, 3.iii.1929, Paratype ♀, (A. Collart) (MNHN).

Anthicus (Aulacoderus) massarti Pic

Anthicus (Aulacoderus) massarti Pic, 1952a: 79

Size. Length 1,87 mm; width over broadest part of elytra 0,70 mm.

Head. Glossy, dark testaceous; posterior arch broadly round; punctures fine and close with fine short procumbent hairs. Eyes small, somewhat bulging.

Prothorax. Mat, chagrinated, testaceous; as long as broad, narrower than head; with bluntly pointed shoulders; narrowing from shoulders to base; closely punctured with light recumbent hairs and lateral erect hairs on shoulders and halfway between shoulders and base; lateral constrictions hardly visible, with few hairs and connected by fine transverse dorsal groove.

Elytra. Somewhat glossy, light testaceous; short and broad, with well developed shoulders; punctures rather coarse with recumbent hairs, longer than on prothorax; some erect hairs along lateral margins.

Wings. Fully developed.

Antennae. Light testaceous; apical four segments broader but not darker; last segment shorter than two preceding ones together.

Legs. Testaceous.

Undersurface. Testaceous, darker than elytra.

MATERIAL EXAMINED. Ruanda: Astrida, iv.1938, Paratype ♀, (J. Ghesquière) (MNHN).

Although this specimen is labelled 'paratype', Pic is not sure of its identity. It does not

come from the Type locality: Zaire, Lomami, Kaniama, 3.vi.1932, R. Massart. The specimen carries two labels, both in Pic's handwriting:

(1) *Aulacoderus massarti* Pic var.

(2) *Massarti* Pic probable. Tête moins rétrécie en arrière que le type. Thorax moins brillant et plus large. Elytres moins larges.

Another difference is that the description gives the punctuation on the prothorax as 'non dense' while on the specimen examined it appears, to the present author, to be particularly dense.

Anthicus (Aulacoderus) mohammedis Mars.

Anthicus (Aulacoderus) mohammedis Marseul, 1879: 232

Size. Length 1,80 mm; width over broadest part of elytra 0,68 mm.

Head. Glossy, dark testaceous; posterior arch round; punctures fine with short light procumbent hairs. Eyes large, darkly margined, bulging and with large ommatidia.

Prothorax. Not very glossy, light testaceous; about as long as broad, almost as broad as head; shoulders sloping and round; punctures fine with light recumbent hairs, longer than on head; with prominent lateral constrictions at $\frac{2}{3}$ of the length of the prothorax and connected by dorsal hairy depression.

Elytra. Glossy, pale testaceous; with fine punctures and light recumbent hairs.

Antennae. Light testaceous; apical four segments somewhat broader; last segment as long as two preceding ones together.

Legs. Light testaceous.

Undersurface. Light testaceous.

MATERIAL EXAMINED. Arabia: Hedjaz, 1878 (?), Type ♀, (no collector) (MNHN).

This specimen looks similar to *A. (A.) pichyrei* but it seems to lack the median dark area on the elytra, perhaps due to the condition of the elytra or possibly by regressive colouration, for the dark mark is mentioned in Marseul's description. The resemblance of the eyes and the prothorax with its lateral constrictions is striking.

Anthicus (Aulacoderus) sulcatulus Pic

Anthicus (Aulacoderus) sulcatulus Pic, 1917: 10

Size. Length 2,50 mm; width over broadest part of elytra 0,75 mm.

Head. Glossy, testaceous to dark testaceous; posterior arch round; punctures prominent with light procumbent hairs. Eyes bulging.

Prothorax. Slightly glossy, testaceous, lighter than head; longer than broad, narrower than head; shoulders sloping and somewhat angular; punctures fine with light recumbent hairs, shorter than on head; lateral constrictions round and prominent connected by an inconspicuous transverse dorsal depression.

Elytra. Glossy, light testaceous to testaceous; shoulders prominent; punctures with light recumbent hairs longer than those on prothorax.

Wings. Fully developed.

Antennae. Slender, also the apical segments; last segment longer than two preceding ones together.

Legs. Testaceous.

Abdomen. Missing from the specimen examined.

MATERIAL EXAMINED. Kenya: Env. de Kalmosie, Forêt de Kakamegoes, Mt Elgon 2 000 m, no date, Type ♂, (no collector) (MNHN).

Pic mentions that this species is near *A. (A.) maynei* Pic but the shape of the antennae is different.

Anthicus (Aulacoderus) sulcicollis Pic

Anthicus (Aulacoderus) sulcicollis Pic, 1895c: 786

Size. Length 1,92 mm; width over broadest part of elytra 0,74 mm.

Head. Glossy, dark testaceous; posterior arch straight transverse with round angles to eyes; punctures fine with short procumbent hairs. Eyes little bulging.

Prothorax. Mat, lighter than head; longer than broad, narrower than head; shoulders sloping and round; punctures very fine with light recumbent hairs; lateral constrictions at $\frac{3}{4}$ of length of the prothorax, shallow and with a shallow transverse dorsal groove connecting the constrictions; an erect lateral hair on each shoulder.

Elytra. Glossy, testaceous, darker than prothorax but lighter than head; with a slightly lighter area on shoulders and light band on posterior half, not quite reaching median suture; punctures fine with light recumbent hairs, longer than on prothorax.

Antennae. Testaceous, last 3–4 segments darker and somewhat broader; last segment longer than two preceding ones together.

Legs. Testaceous, coxae and femora somewhat darker.

Undersurface. Dark testaceous.

MATERIAL EXAMINED. Afghanistan: no date, Type ♀. (no collector) (MNHN).

This specimen has another label: 'Perse (Doria) ♂ type'. The specimen is definitely ♀.

SPECIES OF WHICH NO MATERIAL WAS AVAILABLE

The author has not been able to trace any specimens of the following species. He has no information about them apart from what is given in the descriptions.

Anthicus (Aulacoderus) achillei Pic, 1895a: 42

Described from 'Le Cap'.

It is possible that this species is the form of *A. (A.) bicoloritarsis* Pic with the pair of light maculae on the posterior half of the elytra. This form occurs in the area of the Cape of Good Hope and conforms to Pic's description of *A. (A.) achillei*.

Anthicus (Aulacoderus) atosuturalis Pic, 1955: 94

Described from Kivu, Rutshuru, v.1938, J. Ghesquière.

Anthicus (Aulacoderus) blechroides Baudi, 1883: 150

Described from Israel, Tiberias.

The author has examined two specimens both of which were labelled *A. (A.) blechroides*, one Israel, Mikve Israel, 1931, 1 ♂ det. R. F. Heberdey, (F. S. Bodenheimer) (NMW) and the other Syria, Beirut, 1878, 1 ♂ det. v. Krekich, (NMW). Both specimens are *A. (A.) sulcithorax* Desbr., 1875. The specimen from Beirut has reduced wings but the same is known to occur as an inconstancy in other species of *Aulacoderus*. Baudi mentions the similarity of *A. (A.) blechroides* and *A. (A.) sulcithorax* but finds that the former is smaller, however, he gives no sizes. It is improbable that the elytra of both sexes should be pointed, as Baudi mentions, as in *Aulacoderus* only the males have pointed elytra.

Anthicus (Aulacoderus) bouvieri Pic, 1898: 71

Described from Obock, Lac Assal, 1893, Maindron.

Anthicus (Aulacoderus) caffer Fähr., 1870: 335

Described from South Africa, Caffraria.

The author has seen one male specimen (National Museum of Natural History, Paris) which is labelled '*Anthicus caffer* Fähr. doit être voisin. Port Elizabeth, no date, Dr Martin'.

This specimen is *A. (A.) flavopictus* Laf., described from South Africa, Cape of Good Hope. It occurs in a number of localities, all in the Cape Province, South Africa.

Anthicus (Aulacoderus) ellenbergeri Pic, 1938a: 251

Anthicus ellenbergeri Pic, 1920 was described from South Africa, Steynsburg [3125BD]. The author has seen a Type of this species (NMHN) which was collected by Dr F. Ellenberger in 1910; it is not an *Aulacoderus*.

In 1938 Pic described *Anthicus (Aulacoderus) ellenbergeri* from Lesotho (Basutoland), Leribé [2828CC]. The author has not seen a specimen of this species but judging from the description it probably is an *Aulacoderus* although Pic mentions that it should be placed near *Anthicus raffrayi* Pic, 1894a, which is not an *Aulacoderus* but a *Cyclodinus* from China.

Anthicus (Aulacoderus) ferrantei Pic

The author cannot find a description of this species. It is mentioned by de Peyerimhoff in the description of *A. (A.) picheyrei* as a species from Egypt and Central Sahara, straw-yellow, lighter in colour and smaller than *A. (A.) picheyrei* which is 2,5 mm long. According to de Peyerimhoff these two species are closely related to *A. (A.) sefrensis* Pic and *A. (A.) sulcifer* Pic. The author assumes that *A. (A.) ferrantei* Pic is a *nomen nudum*.

Anthicus (Aulacoderus) friwaldszkyi Laf., 1848: 267-268

The author has seen 3 ♂♂ and 2 ♀♀ (NMW) from Western Greece, Mesolongion, no date, no collector, labelled '*A. friwaldszkyi* Laf. det. v. Kreckich'. One of the males has been dissected and was found to be *A. (A.) funebris* (Reitt.).

La Ferté described *A. (A.) friwaldszkyi* from Hungary and saw another specimen from Austria in the Collection Dejean where it was placed with specimens of *A. fuscus* Dej. (which is *A. caliginosus* Laf.) from Dalmatia and Tyrol. This last species is not an *Aulacoderus*.

Dr. Z. Kaszab, Budapest, informed the author (private communication) that to the best of his knowledge *A. (A.) friwaldszkyi* was never again collected in Hungary.

The descriptions of *A. (A.) friwaldszkyi* and *A. (A.) funebris* differ in two points: La Ferté mentions a yellow prothoracic base and a triangular scutellum for *A. (A.) friwaldszkyi* whereas Reitter describes *A. (A.) funebris* as black except for yellowish tarsi and the scutellum as semicircular. The specimens of *A. (A.) funebris* which the author has seen have no lighter prothoracic base. The shape of the scutellum is difficult to judge without dissection, as there is variation in how much is covered by prothorax in front and elytra laterally and posteriorly.

All specimens of *A. (A.) funebris* the author has seen came from around the Adriatic Sea. No specimens of *Aulacoderus* from Hungary or Austria have been seen.

There is no explanation why Kreckich should have named the specimens from western Greece *A. (A.) friwaldszkyi*; none of the specimens was dissected.

Anthicus (Aulacoderus) griseopubescens Pic, 1920: 20

Described from Zaire.

Anthicus (Aulacoderus) guinensis Kolbe, 1883: 277

Described from Guinea inferior.

Anthicus (Aulacoderus) luberosus Pic, 1955: 74

Described from Kivu, terr. Lubero, 2 200 m, 30.ix.1951, N. Leleup, unique. Dans l'humus en forêt de bambous.

The author has described *A. (A.) humicola* spec. nov. also collected in Kivu in humus by Leleup, but the two species cannot be the same.

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Anthicus (Aulacoderus) maderae Bonadona, 1963: 105–107

Described from Madeira, Ilheu de Cevada, 8.iv.1959, H. Lindberg: 1 ♀ (Museum Zoologicum, Helsingfors, Finland).

Anthicus (Aulacoderus) mecheriensis Chobaut, 1896: 376

Described from Algeria.

Anthicus (Aulacoderus) okandjandensis Pic, 1944: 10

Described from South Africa. The name indicates that this should be South West Africa; Okanjande [2016DA] is in Damaraland, South West Africa.

Anthicus (Aulacoderus) quadrisignatus La Ferté, 1848: 268–269

Described from South Africa, Prom. bon. Spei.

Anthicus (Aulacoderus) semirubrotestaceus Pic, 1914b: 487

Described from Zaire, Conga de Lemba, v.1911, R. Mayne.

DISCUSSION OF THE INTERRELATIONS OF THE SECTIONS AND OF THEIR ZOO-GEOGRAPHICAL DISTRIBUTIONS

Information on the subgenus *Aulacoderus* is, of course, far from complete. Of 22 described species incomplete or no material was available for description and there must be numerous undescribed species.

The greatest number of species is recorded from southern Africa, especially from South Africa where most intensive collecting has been done. Species from equatorial and northern Africa are sparingly represented in collections. Material from southern Europe, where only two species seem to occur, is well represented in various museums.

Mesepimerite apophyses are present in the species of Sections 1–14; in the species of Sections 15–19 they are absent.

The Albitarsis Group (van Hille, 1961), here represented by Sections 1–8, consists of species with an aedeagus which is little modified from the prototype of the coleopterous aedeagus as given by Sharp & Muir (1912). The main difference is the absence of the second connecting membrane (Figs 5–8). The aedeagus is elongate and the dorsal row of teeth of the first connecting membrane is typical of this Group. The eversion and retraction of the aedeagus can take place by change of hydrostatic pressure, caused by the movement of the abdominal segments. This is the dominant Group of *Aulacoderus* in southern Africa. Of the 67 species described in Sections 1–8, 90% occur in Africa south of 10° S latitude which includes South Africa, South West Africa, Zimbabwe, Mozambique, Malawi, Zambia and the greater part of Angola. The subdivision of the Group into 8 sections is based on secondary characteristics.

Section 9, consisting of two species from Zimbabwe, can be derived from the Albitarsis Group. The aedeagus is elongate and small and the dorsal row of teeth of the connecting membrane is absent. The sternum of the retracted abdominal segment is specialized and has two pairs of large hooks.

Section 10 consists of three South African species. The aedeagus is essentially different from that of the previous species. It is short and broad; the tegmen is broad and cucullate and the median lobe has hooks and spines. A connecting membrane is not visible and there is no evidence that the median lobe can move longitudinally in the tegmen. The species are small and wings are reduced or absent. The three species occur far apart: one in the S.W. Cape Province, one in northern Zululand and one in the Transvaal.

Section 11 consists of a single species. It has a short but not a very broad aedeagus which does not resemble that of any other species. The median lobe is u-shaped, the connecting

membrane is not visible; the tegmen has a narrow pointed apical piece. This species occurs in Nigeria and Zaire.

Section 12. The four species have an elongate aedeagus and the connecting membrane has one large dorsal longitudinal hook with recurved apex. The last exposed abdominal sternum is divided into a left and right sclerite. The mesepimerite apophyses are reduced but present (Fig. 3). One species is from South West Africa, two from Zaire and one from the Sudan.

Section 13. The apical piece of the tegmen of the elongate aedeagus has a pair of parameres which do not occur in any of the other sections. One species is from South West Africa, one from Angola and one from Zaire.

Section 14. The median lobe of the elongate aedeagus has a ventral recurved hook. There are two bunches of elongate spines or hairs which are parallel to but not attached to the median lobe. The median lobe everts beyond the apex of the tegmen with the turning inside out of the connecting membrane. The last exposed abdominal sternum is specialized. One species is from South Africa and one from Zaire.

Sections 15–18 differ from all the previous sections in having no mesepimerite apophyses. Only Sections 15 and 16 are represented in South Africa; the majority of the species is from central and northern Africa and the Mediterranean region.

Section 15 represents the Martini Group (van Hille, 1961). The nine species in this section are closely related. The aedeagus is short and broad. The median lobe everts beyond the apex of the tegmen by the turning inside out of the connecting membrane which is unarmed. Characteristic for the species of this section is the sternum of the retracted abdominal segment of the male which consists of a pair of long backward pointing spikes which articulate with the base of the tergum of the retracted abdominal segment via a pair of more or less triangular sclerites. Three species occur in South Africa of which one is also found in South West Africa; four species are found only in South West Africa, one species is from Tanzania and one from Kenya and Eritrea.

Section 16 represents the Flavopictus Group (van Hille, 1961). The seven species of this section are closely related. The elongate aedeagus does not resemble that of any species of the preceding sections. The median lobe is membranous apart from a narrow longitudinal sclerite of which the pointed apex lies at the level of the genital opening. The base of this sclerite is somewhat broader and may be shortly forked; it is surrounded by an area with small pustules or denticles which probably represents the connecting membrane. The attachment of the connecting membrane to the tegmen cannot be seen. The median lobe with genital opening and sclerite can slide up and down in the tegmen but in no case the median lobe has been seen to evert beyond the apex of the tegmen. The mechanics of this movement are not known. Four species occur in South Africa, all in the Cape Province, one in Zimbabwe, one in the Sudan and one in Algeria.

Section 17. The three species of this section have an elongate aedeagus. In its middle lies a simple longitudinal sclerotized bar with an apical genital opening with finely beaded margin. It could be suggested that the longitudinal sclerite of the median lobe of the species of Section 16 had incorporated the genital opening and assumed the function of median lobe. Also here its base is surrounded by the connecting membrane which has pustules and (or) denticles. The connecting membrane ends in a ventral flap with folds and spines. When eversion takes place this flap folds double along the ventral surface of the aedeagus (Fig. 436) exposing the median lobe beyond the apex of the tegmen. This procedure of eversion is a modification of the method where the connecting membrane turns inside out (Albitarsis Group, Sections 14 and 15) and achieves the same result. One of the species occurs in Ethiopia, one in Ethiopia and Syria and one in Kenya.

Section 18. These two species are very similar. The aedeagus is elongate, the median lobe is membranous apart from a somewhat sclerotized base to which the connecting membrane is

attached. The genital opening is elongate and has a beaded margin. As in Section 17 the connecting membrane ends in a ventral flap which folds double along the ventral side of the aedeagus when the median lobe everts (Fig. 444). Both species occur in southern Europe and no other species from this area have been seen. One species has an eastern distribution, the other a more western distribution. There is no evidence that these areas overlap.

Section 19 is not a group of related species but an assembly of species which do not fit in any of the previous sections. All species are without mesepimerite apophyses. *A. (A.) platypennis* from South Africa and *A. (A.) lyonychooides* from Guinea have an aedeagus of which the median lobe is a straight sclerotized bar with a terminal genital opening. In none of the other species the genital opening is visible and often it is impossible to identify the various parts of the aedeagus with certainty.

It seems that the most basic forms of the aedeagus of *Aulacoderus* are represented in the Albitarsis Group (Sections 1–8) of which the great majority of species occurs in southern Africa; many species have a strictly coastal distribution. However, also in South Africa there occur species in which the aedeagus is essentially different from and showing no relation to that of the Albitarsis Group, especially Sections 10 and 16 and to a lesser extent Sections 14 and 15. Further north in Africa and in southern Europe occur species in which the aedeagus shows a wide variety of structure. In some cases (Sections 17 and 18) there are indications about the method of eversion of the male genital tube but in several cases, although the structure of the aedeagus is known, its physiology is not understood.

Intensive collecting in equatorial and northern Africa should yield many more species which might elucidate the understanding of the homologies of the various parts of the aedeagus and the mechanics of its functioning.

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